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IRON AGE

MANUFACTURING MANAGEMENT

1986

THE RECOVERY W

THE BIG EVENTS OF '86

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IRON AGE
MANUFACTURING MANAGEMENT

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1986 THE RECOVERY WON'T RUN OUT OF STEAM

BY JOHN D. BAXTER

The good news for 1986 is that a recession is unlikely.

The bad news is that business growth will be too weak to give any real upward tug to some already-struggling metalworking industries. Still others that did reasonably well last year, may find they are trying to cope with too little too long.

This means simply that 1986 is going to be a tough, competitive alley-fight year for many metalworking companies.

For one reason, a continuing decline in the exchange value of the dollar won't be a lifesaver for trade-battered companies this year. It takes time for the benefits of a dollar fall to take hold. Importers, desperate to hold on to their lush U.S. markets, will face up to lower sales margins on their U.S. business. That means they will cut prices if they must to hold on to these markets.

Too, no forecaster seems to be saying that prices will break out on the upside this year. That means corporate efficiencies, not mere posting of higher tags on products, will be needed to assure profitability—or survival.

Further, there is a special sword hanging over the business scene this year. The Federal tax reform bill that is shaping up could mean an added $25 billion tax burden for industry this year.

While it appears that the corporate income tax rate will be cut, the added business costs due to likely loss of the investment tax credit and to loss of fast writeoffs on capital assets, will result in a net added tax load for U.S. industry.

Clearly, it will be capital-intensive industries that will be hit the hardest by the tax reform as it now shapes up. These industries include most in metalworking.

So, at a time when industrial production levels and plant capacity usage rates are wobbly, capital spending will likely be taking a right to the jaw from the Administration and the Congress.

Two recent major surveys of business executives on their plant investment plans for this year point to little or no change from last year in their outlays.

Iron Age is forecasting a 6 pct increase in plant spending by durable goods manufacturers this year. That may sound good, but that's before inflation. In real terms, the gain probably will be close to 2 pct.

It has to be remembered, also, that capital durable goods include computers and other information/communication equipment as well as well as products of basic goods industries, such as machine tools, construction equipment and so on. It is the computers that will likely be providing much of the growth thrust to business plant investment this year. Computers are making a comeback from a breath-catching pause in market growth last year. But basic goods producers still face low plant operating rates, weak profits, tough competition and thus little incentive—or sometimes the means—to invest heavily.

For many key metalworking industries, 1985 was not a good 'springboard' year. These industries in 1986, as one corporate economist wryly noted, "will hit the ground stumbling as the year opens."

A close look at the all-important flow of orders going to durable goods producers in 1985 shows the less-than-exciting pace that led into this year. Up to November of last year, orders flowing to these manufacturers (85 pct in metalworking), were up 3.3 pct over the same period in 1984. Again, this was in current dollars. In terms of actual volume of goods ordered, it was a wash.

Orders received by some important metals and metalworking industries were actually down over the 10 months last year, even in current dollar terms. Orders received by primary metals producers were down 3.3 pct. New business flowing to makers of nonelectrical machinery fell 1 pct. More importantly, orders going to nondefense capital goods

producers were also down 1 pct.

This forecast report takes a look at 1986, not just quarters, as is done in *Iron Age's* quarterly outlook series. So, a look at the numbers in the last two years can bring a clearer view on just how 1986 shapes up—at least, in the view of *Iron Age*.

Gross National Product

In 1984, the U.S. economy grew by 6.8 pct (the strongest year of growth since 1951). In 1985, growth was 2.5 pct. This year, *Iron Age* is in line with many economists who are predicting 3 pct growth.

The perceived growth for this year then is above the widely-accepted 2.5 pct figure that marks a growth recession (growth, but not enough to fully absorb the growing workforce). However, the projected 3 pct expansion is below the nation's long-term average of 3.5 pct.

That 3 pct growth estimated for this year is in real terms, but being an aggregate figure it hides some important undercurrents. For one, service industries will likely outperform manufacturing in 1986.

The really notable reason for the lack of fresh growth thrust in the overall economy this year is found in a bought-out consumer. To an important degree, he has 'spent his wad.' Now, after 38 months of an economic growth cycle, his debt is growing faster than his income and his savings are near a record low point. And it has to be kept in mind that the consumer is the engine that provides two-thirds of all the horsepower in the U.S. economic engine.

In 1984, orders for consumer goods were about 15 pct greater in dollar value than in the previous year. Last year, these orders were up an estimated 3 to 4 pct—a big comedown, as those in many metalworking industries can attest. It was auto industry orders, considered as shipments in that industry, that pulled up this overall gain. Orders in this industry were up 7 pct. Some other key metalworking industries, as noted earlier, experienced actual declines in orders.

The forecast here for 1986 durable goods new orders calls for an increase of 4.9 pct. Again, leavened by an inflation allowance, the real, or increase in volume of goods, will likely come close to 2 pct.

In 1984, capital investment by durable goods producers rocketed. It grew by 16.3 pct over the previous year. Last year, this spending rose by 8.3 pct. That was a strong showing followed the spectacular growth of 1984.

This year, a 6 pct increase in plant investment is forecast. After allowing for inflation, this growth comes out to about 2 pct.

Capital goods producers in this country will probably not see much of that growth. This forecast builds on the data generated by the U.S. Commerce Dept. for 1985. That data reflects what business executives told Commerce officials they intended to expend; it doesn't say *where* they planned to do the spending. Actual spending will often be made overseas for foreign-built equipment. So, factor a big divider into all figures on capital spending by U.S. manufacturers.

In sum, it appears that 1986 is going to be a 'slug-it-out' year for much of U.S. metalworking. Companies will likely be operating in a growth environment—with a restrained, and possibly, lop-sided growth thrust. The year of tepid growth will be tough because it follows a year of little growth for metals and metalworking.

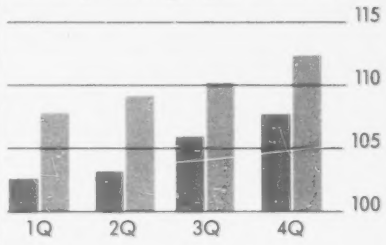
Defense spending should be a bright corner in the 1986 economy. Construction can be expected to be a plus in the economy as office buildings and multi-unit residential buildings continue strong. And the service industries will likely continue to thrive and help keep employment levels up.

However, for basic goods manufacturing industries, cost-cutting, some retrenchment and more restructuring will continue. This will be a year for lowering breakeven points and continuing to build more efficient corporations for the years of opportunity beyond 1986.

Of course, some companies in metalworking will do better in 1986 because much of their wringing-out and trimming-down has been done. These companies will be able to thrive on the relatively lean pickings of 1986. □

NEW ORDERS, DURABLE GOODS

Billions of Dollars,
Seasonally Adjusted
Monthly Averages per Quarters

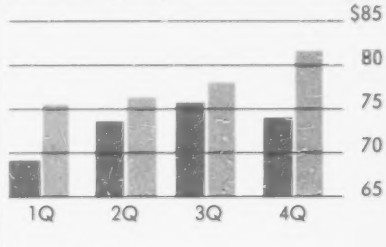


*IA Forecast

Source: U.S. Commerce Dept.

PLANT SPENDING, DURABLES

Billions of Dollars,
Seasonally Adjusted Annual Rates



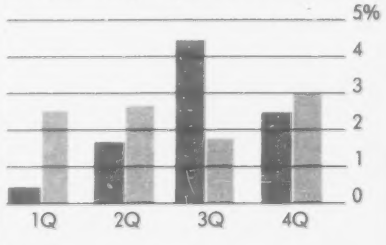
*Per Commerce Dept. Survey 8/85

**IA Forecast

Source: U.S. Commerce Dept.

GNP

Pct Increases per 1972 Dollars
at Seasonally Adjusted Annual Rates



*IA Forecast

Source: U.S. Commerce Dept.

STEEL

if the new steel prices stick, the industry could dig its way out its profitless pit.

Going into 1986, steel producers are predicting a year a little worse than 1985.

A decline in steel consumption is expected to offset an import reduction and leave steel shipments a little under the 72 million to 73 million tons of last year.

There are two points to be made about the standard forecast. First, it might be wrong in either direction and there are some grounds for wondering if the error might not be on the side of excessive pessimism.

If the estimates are right, steel orders should have dropped in late 1985. Instead, there was a pickup. That could mean steel users are protecting themselves against steel price increases announced for January or the steel market is stronger than anyone expected.

Either explanation would be welcome by steel producers. If the new prices stick, the industry could dig its way out of its profitless pit.

A second point is that the whole year could be scrambled if steel labor negotiations heat up. Steel shipments were stable in 1985. Second half deliveries were only about 1 million tons under the first half's.

In 1986, the threat of a major steel strike could cram an inordinate amount of business into the first half. There would then be a sharp letdown in the second half.

That used to be the standard sequence in years of steel labor negotiations. Steel users would hedge against a strike partly by putting in a lot of extra inventory.

A second hedge was to contract for foreign steel during the period of the possible strike. The full brunt of the ultimate inventory liquidation fell on domestic producers and foreign suppliers made permanent gains in the U.S. market.

To ward off these effects, steel companies and United Steelworkers of America (USWA) entered into a no-strike agreement in the 1970s. That has since been dispensed with and the Steelworkers will be free to strike if there aren't new labor agreements by Aug. 1, 1986.

In this setting, there could be a return to crisis bargaining. Steel management is determined to get concessions and the Steelworkers aren't likely to give ground easily.

It doesn't necessarily follow, however, that there will be a big inventory binge. For one thing, steel users are conditioned today to operating with a minimum of inventory. Just-in-time policies won't be abandoned if there is any alternative.

Apart from labor, the two big influences will be the state of the economy and the steel import trend.

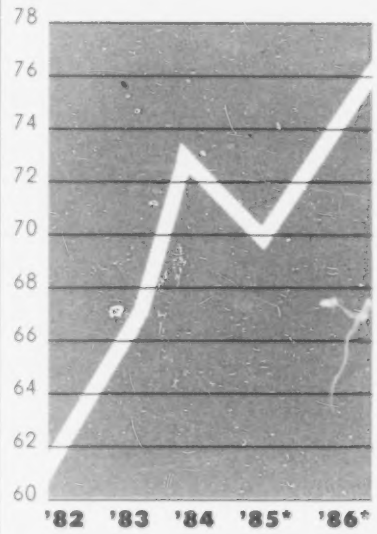
One analyst with a major steelmaker looks for consumption of steel to fall from 95.7 million tons in 1985 to 86.8 million tons in 1986. He pointed out that changes in the Federal Reserve's industrial production index indicated that past estimates of steel consumption were too high. That meant estimates of steel inventories have been too low.

More important, he believes sales of domestic autos will fall by 17.6 pct in 1986. The auto industry has been the main prop of the steel industry for the last three years.

An auto slide would be crushing because there is little relief in sight elsewhere. Machinery, railroad equipment, farm equipment, and other capital items were all expected to show declines in 1986.

The analyst also predicted that steel imports would fall from around 23 million tons in 1985 to 19 million tons in 1986. The 1986 number implied that the Reagan Administration's restraint program would take effect. That was a reasonable assumption, but through most of 1985, the program was ineffective.

Steel Shipments
In Millions of Tons



Source: AISI
*/A estimate

NONFERROUS

This is supposed to be the year the nonferrous metals companies get a break from the international foreign exchange market. How far they will be able to run with it depends on a lot of other factors, like general economic conditions, interest rate trends and how long John Q. Public's second honeymoon with the automobile lasts.

The base metals companies didn't share in the 1983-84 business recovery, much less its extension into 1985. The demand was there, but price improvement wasn't. The strong U.S. dollar cut into the domestic companies' share of their home market while production levels buoyed by chances for large dollar sales held prices down on domestic and overseas markets.

The dollar began easing off against some key currencies even before the late decision by some leading industrial nations to devise a soft dollar program for 1986. This was paralleled by some easing up of import volume for primary copper and primary aluminum, as well as some downtrend in imports of aluminum mill products and copper and brass products.

It wasn't until the final weeks of the year, that copper and aluminum prices began taking a firmer tone.

The main problem—one that shifting currency values can't cure alone—in 1985 was abundance, or ready availability. In the aluminum industry, for instance, U.S. producers cut their domestic output by nearly 650,000 short tons, or about 24 pct. Their inventory, however, declined by only about half that tonnage. Worldwide producer inventories at the nine-month mark were down only about 370,000 short tons, or about 7.8 pct. The North American companies, according to the International Primary Aluminium Institute, accounted for about 60 pct of the total drop.

However slow producer inventories have been declining, they are going down. If demand holds up, the bellwether London Metal Exchange price should firm up in 1986, easing the pressure on mill product prices, except possibly can stock, where the competition promises to be stiff.

Copper prices were on an uptrend in the latter weeks of 1985. Order and shipment patterns were improving and consumer inventories tended toward the thin side.

Producer and hedge market inventories trended downward last year, albeit unevenly. U.S. refined stocks and hedge market stocks were down, but foreign refiners' stocks were less so.

The U.S. companies never got the import program they wanted. They did get a one-third drop in cathode copper imports in 1985, thanks mainly to lower intake from Canada and Chile. Imports of copper and brass mill products also fell last year from record volume in 1984.

With improved market fundamentals, copper analysts project an average cathode price of 75¢ a lb for 1986, compared with 67¢ a lb in 1985. If the import trend holds, this should give surviving U.S. companies some breathing room.

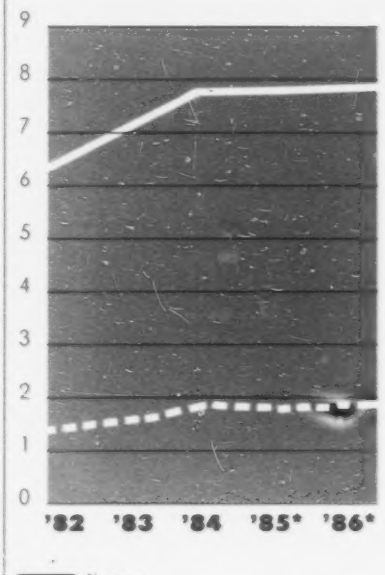
Some major wage pacts have to be renegotiated next Spring and this, combined with the slope in producer and hedge market inventories, could persuade consumers to ease up on their tight inventory policies.

The collapse of the International Tin Council's price support mechanism on the London Metal Exchange last October added to uncertainties on other markets. The price trend in aluminum, nickel and copper had been downward, however. In nickel's case, it took Inco's projected 20 pct slash in nickel production to restore LME values somewhat.

If aluminum demand holds up, the bellwether London Metal Exchange price should firm up.

Nonferrous Metals Shipments

In Millions of Short Tons



Source: American Bureau of Metal Statistics, Aluminum Assn

*IA estimate

AUTOMOTIVE

U.S. automakers are likely to sell 7.7 million cars in 1986—500,000 units fewer than the estimated 8.2 million sales in 1985. Foreign automakers probably will sell about 3 million cars in 1986—200,000 more cars than the 2.8 million cars they sold in 1985.

Car and truck sales in the 1985 model year totaled 15.4 million units, which set a new record. That narrowly exceeded the 15.3 million total vehicle sales in the 1978 model year. The model years 1985 and 1978 are the only two years in history that total vehicle sales exceeded the 15-million mark.

Executives at GM are the most optimistic about the outlook for 1986. "We have a real shot at surpassing 15 million units once again in the 1986 model year," said one top GM executive, "and perhaps setting another new record if everything works the way we hope it will." Model years run from October 1 to September 30.

Analysts and executives at the other leading American automakers are more cautious. They are predicting domestic car sales of 7.2-7.4 million in the 1986 calendar year.

Annoyed at its loss of market share over the past ten years, GM is determined to increase sales in 1986. GM is maintaining ambitious production plans for the first quarter of 1986. However, the No. 1 automaker is piling up excess inventories at dealer lots. The excess inventory means that GM is likely to offer low-interest financing to consumers in early 1986 and probably periodically throughout the year. Ford, Chrysler, and American Motors will be forced to follow suit.

Production at all the U.S. automakers will remain strong in the first quarter. Automakers suspect that any downturn in car sales in 1986 will occur in the fourth quarter. "I predict a moderate downturn in the overall economy in late 1986 and early 1987," said an analyst at one Big 3 automaker. "The economy could pick up after that."

Consumer confidence has been holding steady at high levels since 1984. Most analysts expect consumers' willingness to spend to continue to be high in 1986, though down just a little from 1985. The two years of high consumer confidence in 1984-5 are the greatest sustained level of high consumer confidence since the 1960s. Consumer confidence mainly reflects how secure people feel about holding their jobs.

Prolific consumer spending, however, has been financed by record levels of borrowing. "The economic happiness of the American economy today," said one Big 3 analyst, "is based on borrowed money." That means that the current health of the American economy is precarious—and could be endangered by the kinds of bankruptcies and defaults on loans that have hit the farm belt.

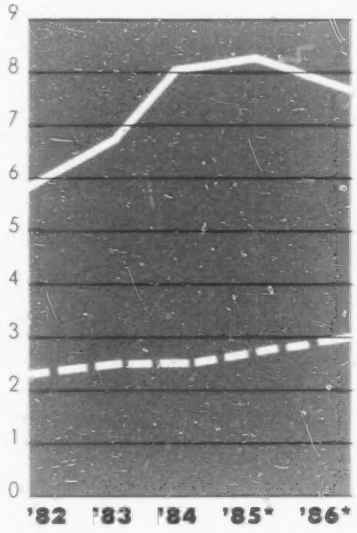
Auto analysts predict that consumers' disposable income will increase by 2.4 pct in 1985. That's slightly higher than the 2.2 pct increase in 1985 but nowhere near the 6.7 pct rise in 1984. Auto analysts expect the prime interest rate in 1986 to hover around the 10-pct mark, about the same as in 1985. Likewise, the average interest rates for auto loans should be about the same in 1986 as in 1985: 12.5 pct.

Trucks presently are accounting for the biggest growth rates in the vehicle market. The popular mini vans sold by Chrysler, GM, and Ford are all counted as trucks. An estimated 4.6 million trucks were sold in 1985: an all-time record. Truck sales in 1986 should almost equal that: Auto analysts and executives estimate 4.4 million truck sales in 1986.

Executives at General Motors are the most optimistic about the outlook for 1986.

Automotive Sales

In Millions of Units



Source: Motor Vehicle Manufacturers Assn

*IA estimate

MACHINE TOOLS; FLUID POWER

MACHINE TOOLS—The outlook for the U.S. machine tool builders did not look promising at the end of 1985. Business was off about 11 pct, and sinking.

The prospects for business to improve depend upon if and when factory capacity utilization rates increase. Where the preferred operating rate is in the 85—90 pct range, operating rates in the U.S. are in the 75—80 pct range and declining.

The non-electrical machinery capacity utilization rate, which is most important for the machine tool industry, is at the 75 pct level, which means that 25 pct of capacity lies unused.

What will American industry do? Two choices are in the offering. One is to outsource; the other is to modernize plant and equipment.

Despite an apparent upward trend to outsource, U.S. manufacturers are beginning to rethink the production process and how they utilize machine tools. As a result, there is a growing interest in flexible machining methods, particularly machining cells, which strengthens the demand for metalcutting machine tools. Builders of large machining systems and special machinery should see increased sales in 1986.

New materials for use in mass production products are also beginning to impact on the machine tool industry. The industry can expect to see more laser- and abrasive waterjet- cutting systems.

Also strengthening the prospects for increased machine tool sales are new, innovative machine tool designs that are only now being introduced. Many of these are aimed at the aircraft engine, aircraft mainframe, and die and mold industries.

Despite the doom and gloom forecasts, the total consumption of domestic-produced and imported machine tools could improve in 1986.

FLUID POWER—After a sharp recovery in 1984 and an uptick in September, fluid power slipped in the fourth quarter and for 1985 will be off about 2 pct on its order rate.

For 1986, most fluid power producers foresee another 1 pct or 2 pct drop in new orders. Some hope for gains of at least 5 pct, and a few hopefuls, riding a wave of new products, say they might be able to squeeze out a 10 pct gain. But these seem to be the exceptions.

The biggest part of the industry is hydraulics, and this was running below the 1984 recovery year in eight of the first nine months of 1985. September was the first month that ran substantially over the 1984 period. Even with that performance in September, however, hydraulic orders as reported by the National Fluid Power Association were running 8 pct under the 1984 recovery.

Pneumatics did better through much of the year. But in the fourth quarter, it stalled. Some producers were reportedly down 20 pct as the year drew to a close.

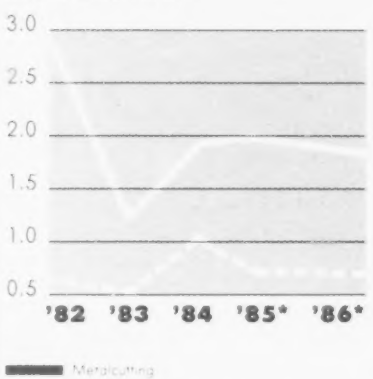
The continuing flat sales book has been related to the impact of imports, the high value of the U.S. dollar that's crimped off-shore sales for U.S. fluid power builders; and the indirect loss of domestic markets as U.S. OEM users of fluid power equipment continued to shift more manufacturing off-shore.

In domestic markets, aerospace and automotive remain the star performers. Neither of these is expected to show much gain during the coming year. Offsetting that solid business base is a continuing drag on capital goods producers, who have been canceling some orders.

It has also kept pricing pinned at low levels, so that unit sales gains haven't been reflected in total dollar volume. For that reason, some dollar forecasts may prove to be high.

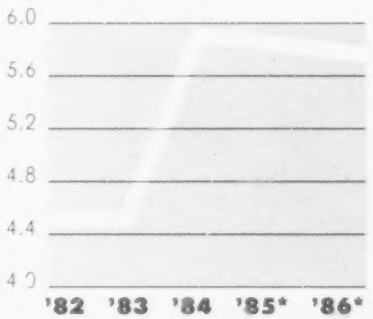
Builders of large machining systems and special machinery expect higher sales in 1986.

Machine Tools
Net New Orders
In Billions of Dollars



Source: National Machine Tool Builders Assn
*IA estimate

Fluid Power, Shipments
In Billions of Dollars



Source: U.S. Department of Commerce and NFPA
*IA estimate

COATINGS; PLASTICS

COATINGS—Industrial-coating companies expect to ship about 307 million gal of coatings in 1986. That's 3 million gal fewer than they shipped in 1985.

Vehicles are the single biggest market for coatings. In 1986, automakers will begin to use the five new electrogalvanizing (EG) lines that come onstream this year. EG steel will replace the Zincrometal steels, which have zinc-rich coatings and are used for outer body panels. However, automakers will not switch from Zincrometal to EG in large volumes until 1987 and 1988.

As Zincrometal body panels are phased out, coating companies plan to target other car parts for coating use. Coil coaters already have had success with windshield wipers and oil filters and plan to market coil to other car parts.

Coil coaters are even hoping to interest automakers in preprimed body panels. "If automakers used coil-coated EG steel," said one coil-coating executive, "that would eliminate the need to prime, phosphatize, and bake body panels in the auto plants." However, the automakers have invested large sums of money in building electrocoat priming systems. That means automakers probably won't consider coil-coated EG steel for several years.

Farm equipment should rebound slightly in 1986 and use coatings. Housing also is expected to remain healthy.

Coil coaters have expected their shipments to the appliance industry to rocket for the past several years. Instead, that market has showed steady, not phenomenal, growth.

Still, the amount of coil-coated steel used for appliances has risen. For 1986, coil coaters expect sales to the appliance industry to drop from 1985 but penetration by coil coatings will increase.

PLASTICS—In plastics, there are the commodities and there are the engineering plastics. The latter, although only at present a small fraction of the entire world of plastics production, is the segment of highest interest to metalworking.

Sales of engineering plastics, according to one qualified observer, were up 3 or 4 pct last year from 1984. The output would have been better had it not been for a slump in the electronics industry.

For 1986, automotive demand for plastics likely will be slow in the first half, then pick up toward the end of the year. The electronics sector should strengthen as well.

"We could have 6 pct growth in engineering plastics in 1986," one forecaster noted. "There are a lot of new applications in the automotive industry.

The major trends there, he added, will be the continued conversion from metal to plastic bumpers and the expansion of the Fiero concept to other cars. The newer cars will have to be designed in 1986.

Most prominent in resins for engineering plastics will be blends of thermoplastic polyesters, nylons and polycarbonates.

The Society of the Plastics Industry, New York, revises its annual statistics every September for the year before. Last year's revised figures put plastics shipments at 44 billion lbs, whereas it just fell short of 40 billion lbs in the earlier report. In 1984, it was 44 billion lbs. In 1983, it was 40.8 billion lbs.

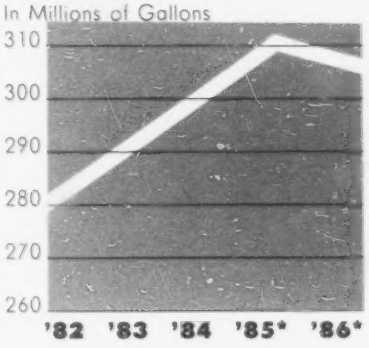
For the first nine months of 1985, sales were running 6.3 pct ahead of 1984. It should end up at about 6 pct ahead of 1984. This year, look for another 5 pct gain.

Likewise, commodity plastics producers serving the industry's biggest markets—parts and packaging—look for a 4 to 5 pct gain in 1986.

As Zincrometal body panels are phased out, coating companies plan to target other car parts for coating use.

Industrial Coatings Shipments

In Millions of Gallons

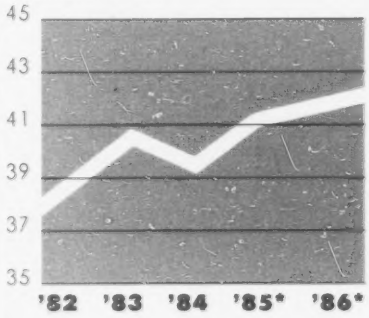


Source: U.S. Department of Commerce

*/A estimate

Plastic Resins Sales & Captive Use

In Billions of Lbs



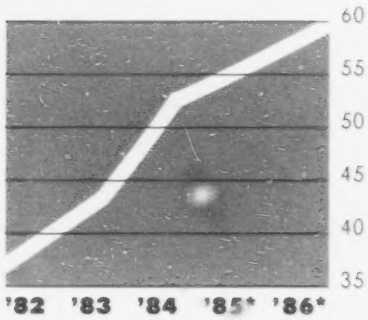
Source: SPI Committee on Resin Statistics as compiled by Ernest & Whinney

*/A estimate

COMPUTERS; INSTRUMENTS & CONTROLS

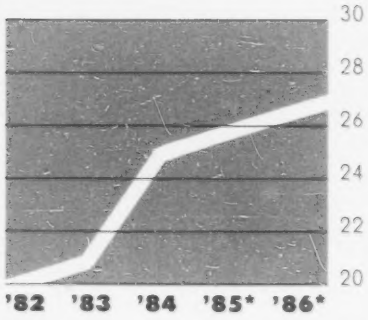
In 1986, sales growth in the computer industry will be a modest 8 pct.

Computers
Shipments
In Billions of Dollars



Source: U.S. Department of Commerce
*IA estimate

Instruments & Controls
Shipments
In Billions of Dollars



Source: U.S. Department of Commerce
*IA estimate

COMPUTERS—In 1985, the computer industry stumbled for the first time. But the evidence is growing that it is beginning to right itself.

After three flat quarters, computer sales picked up during the last quarter of 1985.

Because of this last minute surge, industry growth for last year could be up 4 pct over 1984. In 1986, growth, in comparison to past years, will be a modest 8 pct.

But 1986 is a year hanging in the balance. On one hand, firms are growing convinced of the need to computerize to remain competitive. On the other hand, capital spending is on the decline—and 25 pct of capital spending goes for computers.

Faced with increased competition, firms may decide either to shop for a competitive edge or cut back to conserve capital. Either tactic will effect computer sales.

One reason for optimism about sales is that some long-awaited products are now available. Firms that have been waiting can now go shopping. New lines of superminicomputers, for example, are available as well as advanced workstations. Digital Equipment's new 8600 superminicomputer as well as its Microvax II workstation are selling well. And firms, waiting patiently for IBM's new Sierra series mainframes, can now put in their orders.

Last year, companies slowed their rush to buy computers and stepped back to consider how they could best be used. Integration rather than stockpiling became the goal.

The integration tools to link and network automation equipment may be inadequate, but developments are occurring daily. One of the most promising, Manufacturing Automation Protocol (MAP) being championed by GM and others, could help the industry convince its customers that it has more to sell.

INSTRUMENTS & CONTROLS—The outlook for 1986 for the process control industry at the end of 1985 indicates that the industry is on a slight uphill slope, with prospects for a flattening out or falloff in the last quarter of 1986. According to industry estimates, the slope ranges from 10 pct to 15 pct for some categories, which ain't bad in some circles.

This is a gut-reaction forecast because the industry is so broad that it is nearly impossible to focus on specifics. About 75 pct of sales of process control equipment in the U.S. goes to only four major industries. The largest percentage goes to the chemical industry, which buys about 26 pct; the petroleum industry, which buys 22 pct; public utilities, 17 pct; and primary metals, 13 pct.

Interestingly, one pie chart showing market share of process control equipment does not even mention manufacturing, though everyone knows that process controls are vital to many manufacturing processes.

Indicators of how the process control industry is faring include new plant and equipment expenditures, current and anticipated levels of real output, and the effect that emerging technologies have or could have on the industries served.

In recent years, process control equipment sales have increased at a greater rate than the Industrial Production Index. Although over 1,000 firms are members of the process control industry, the top ten suppliers account for nearly half of the industry's sales.

While the outlook continues to be favorable for most of 1986, the hottest markets at the end of 1985 are environmental controls and instruments to measure electricity. The latter's future progress is dependent on the semiconductor industry, which could prove troublesome.

CONSTRUCTION; FARM EQUIPMENT

CONSTRUCTION EQUIPMENT—The construction equipment industry will show another gain in 1986, industry sources believe. Shipments in 1985 rose about 6 pct, and 1986 should be up another 5 pct.

The numbers are modest, compared with some government data that showed a 40 pct gain in the first half of 1985. But the 1985 data covered equipment that wasn't included in previous reports. Excluding that change, the final figure of gain is pretty modest.

In actual units shipped, the industry did better than the dollar return would suggest. But prices were soft through both 1984 and 1985. And, one source pointed out, there was a deflation that pushed dollar totals below unit shipment gains.

The continuing inroads by imports have siphoned sales from domestic machinery builders. Imports hit $1.9 billion in 1985, a 15 pct market share. This is a climb from only $643 million in 1983.

The good side of the picture is that dealer inventories have been whittled down and observers of the dealer group report confidently that the average dealer is in a fairly lean position.

Equipment dealers in 1985 was selling about 3 pct more equipment per month than the prior year's period, according to the Associated Equipment Distributors Assn. That isn't that big a gain, but it's on top of an average monthly gain during 1984 of 22 pct per month.

The strong action in 1985 has been in highway and paving related equipment. The off-highway and heavier equipment showed some gains, but far less than the highway machinery. Light equipment has been helped by the continuing strong housing construction and this should continue at least through first half of this year.

FARM EQUIPMENT—For 1986, farm equipment builders are looking at another flat year, despite what appears to be a growing potential for equipment sales based on farm depreciation needs.

A negative change in depreciation rules by Congress would offset even that faint hope. Generally, world commodity prices remain low, competitive, and with little expectation of a change during 1986.

The flurry of activity in early 1985 in under-40 horsepower tractors roused hopes that the farm machine market would rebound. Unfortunately, this end of the market leans heavily on imports and has a low price ticket. Meantime, the heavy equipment like tractors and combines, continued to suffer.

As 1985 closed, producers of heavy equipment were cutting back on output. In the past, the end of the year has seen a sales flurry in either October or December.

By October, combines were down nearly 30 pct, as were forage harvesters. Big tractors were off an aggregate 36 pct.

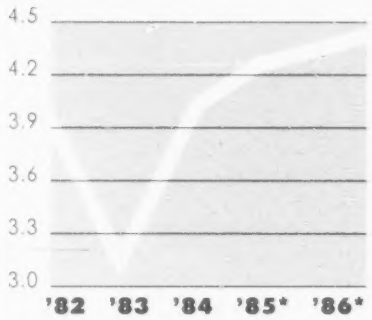
The pessimism has become deep enough that a few company officers can see further declines in 1986. It can be remembered though, that the farm machine forecasters had talked about a 5 pct decline in 1985. So even coming through flat with their 1985 performance, they did a few percentage points better than expected.

Farm equipment usually has its strongest product shipment period in the first and second quarters. For 1986, even that period won't show much gain. In strong years like 1979, the second half traditionally is slower. So there doesn't appear much relief in sight for 1986. Only the light industrial equipment divisions seem to show relatively good performance.

The construction equipment industry should be up another 5 pct in 1986.

Construction Equipment Shipments

In Billions of Dollars



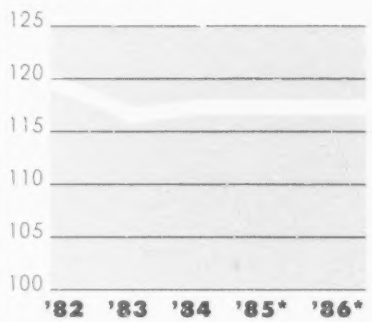
Source: U.S. Department of Commerce

*IA estimate

Note: Figures for 1985 do not reflect Commerce Dept. additions to its list of selected products. *IA estimates are projected on previous year's basis.

Farm Equipment Wheeled Tractor Sales

In Thousands of Units



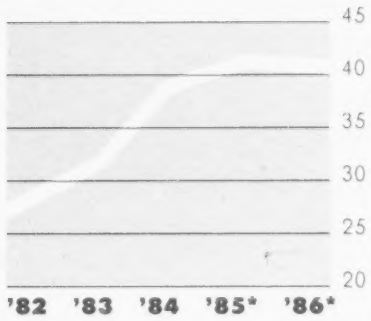
Source: Farm & Industrial Equipment Institute

*IA estimate

APPLIANCES; MATERIAL HANDLING

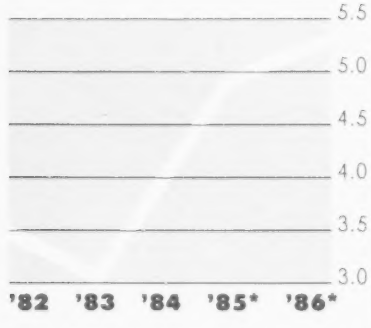
The appliance industry in 1986 is expected to equal or exceed the record pace of last year.

Appliances, Shipments
In Millions of Units



Source: Assn. of Home Appliance Manufacturers
*IA estimate

Material Handling Shipments
In Billions of Dollars



Source: Material Handling Institute
*IA estimate

APPLIANCES—It was a record-setting year for the appliance industry in 1985, with over 40 million appliances shipped.

From January through October, buyers seemed oblivious to economic forecasters' forecasts that blew hot and cold throughout the year. Each quarter set a new record. Industry shipments for the period exceeded 35.3 million units, which is also a 10-month record.

By November it appeared that industry shipments for 1985 will exceed 41.2 million units, a gain of 4.5 pct over 1984, the previous record year at 39.4 million units. Only 7.8 million units were needed to tie the record.

The outlook for 1986 is predicted by industry experts to equal or exceed this new record. Part of the basis for their expectations is that interest rates for home mortgages have remained relatively low, employment levels are acceptable, and the home market appears stable.

There are no traumatic events impending that would be expected to drastically change buying trends. Even the Congress seems to have taken a more cautious approach to changing the tax structure regarding interest deductions for first and second home mortgages.

One of the major appliance manufacturer's economic forecasters predicted that there would be some improvement in economic factors that would generate modest growth in the first half of 1986, but then interest rates were expected to gradually increase so that the second half would be a bit softer.

For 1986 it is expected that annual shipments will reach 40.5 million units, with 9.8 million units shipped during the first quarter.

Core appliance sales, which exclude microwave ovens and room air conditioners, may match '85 sales.

MATERIAL HANDLING—The material handling industry is expected to stay on course this year, meaning it will probably finish 1986 on par with 1985. But that's nothing to complain about.

One material handling executive says his firm's orders could increase between 5 and 11 pct this year.

Overall, U.S. markets for conveyors and conveying equipment, hoists, overhead cranes, monorails as well as automated storage and retrieval systems have been in a growth mode since the mid-1980s.

Latest figures for 1985 showed bookings and shipments running some 10 to 6 pct, respectively, over those of 1984.

Several industry members expect more of the same through the first quarter of 1986, though they have some doubts about the second half.

Because they are vulnerable to the cyclic swings of a free-market economy, several material handling equipment manufacturers said they were unhappy about recent reports that U.S. manufacturing firms planned to downgrade capital expenditures for this year.

That, coupled with the high consumer debt level and the fact that Congress can't make up its mind how to reduce the Federal budget deficit, has one Eastern materials handling executive concerned: "The general economy is in a state of limbo and that's not so hot for our business. Period."

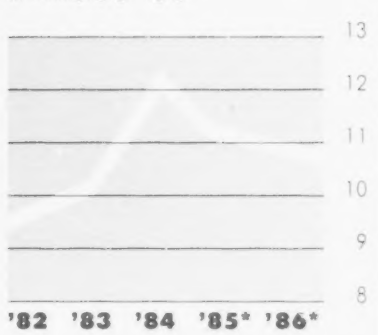
Nevertheless, depending on the markets served, order levels will range from flat to robust in 1986.

Manufacturers that serve the automotive or packaging segments see a lot of activity this year. Likewise, orders for automation-related material handling equipment, designed to feed parts for automated assembly operations, will likely continue on the upswing.

CASTINGS; FORGINGS

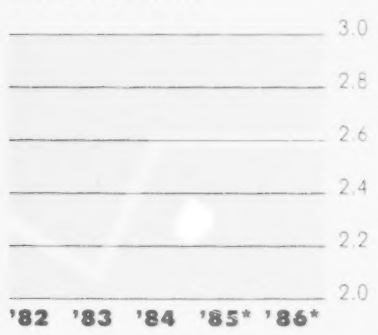
Foundrymen foresee a decline of 3 pct in 1986, with much of this in the automotive area.

Ferrous Castings Shipments
In Millions of Tons



Source: U.S. Department of Commerce and Iron Castings Society
*IA estimate

Impression Die Forgings Shipments
In Billions of Dollars



Source: Forging Industry Assn.
*IA estimate

CASTINGS—Many foundry executives believe 1986 will prove as difficult to predict as 1985.

Last year, an expected 5 pct gain turned into a 9 pct decline in tons of ferrous castings shipped. In 1986 the consensus anticipates a mild decline of 3 pct, with much of this in the automotive area.

Since auto is a big part of U.S. castings markets (about 35 pct by one estimate), a decline in that area has a major effect.

The moderate decline can be explained by the decision of several captive foundries to cut back production and bring in a greater proportion of offshore castings.

This will be supplemented by outsourcing more castings from domestic independent foundries. So a number of independent U.S. foundries will be able to run at least at 1985 levels through 1986. Some foresee an upturn as early as the first quarter.

Seasonally, March, April and May should be the heavy volume months of 1986. There is usually a mild seasonal recovery again in the September, October, November period. But for most of the industry, the second half of 1986 is still a question-mark.

One industry member, who sees 1986 running at 1985 levels with no drop off whatever, figures his firm will do the better part of its business in the second half.

So there's a lot of disagreement, but most agree on two matters. First, that total automotive castings use, whether from imports or domestic foundries, will decline in total tonnage. Captive foundries will be off somewhat more than independents. And second, that whatever the fate of auto sales in 1986, the import problem won't get better and may get worse, from the standpoint of the domestic foundry.

FORGINGS—The forging industry faced a rough 1985 and is expecting a slightly better 1986. The order increases, largely from the military and commercial aircraft manufacturers, will account for the growth.

Custom impression die shipments were expected to reach $2.6 billion in 1985, the same dollar volume for both 1984 and 1985. But orders are a different story. Bookings for 1985 likely will total $2.2 billion, a 15 pct drop from the previous year.

Orders this year are projected to climb to $2.5 billion. But even allowing this modest growth, forging activity for 1986 will be weak.

One reason for the lack of business is that forgers continue to be eaten alive by offshore competition. Figures from a year ago show that by conservative estimate some 40 pct of the 1984 consumption of ferrous forged products in the U.S. and Canada came from from abroad. And these totals worsened last year.

Another reason for poor sales is continuing depression of major markets. As farmer's woes deepen and imported equipment becomes more common, the farm equipment and off-highway markets continue to slump. Oil field sales remain depressed, while the use of forgings in metalworking and special machinery is not expected to pick up.

The automotive industry has been the big purchaser of forgings over the past year. Industry members hope that sales to the auto industry hold up through 1986. Rising imports and reduced consumer spending could dash that hope.

The best news for the new year is that commercial airlines seem to ready to start ordering new planes. Several forge shops report an increase in orders from the aircraft industry. In line with that activity, forge shops expect more orders from the defense industry this year.

AIRCRAFT; ENGINES & TURBINES

AIRCRAFT—The long-awaited surge in new aircraft orders finally took hold in the second half of 1985. There are indications it will continue right through 1986.

Several factors have turned industry executives strongly positive for the new year. Not the least of these is a continued increase in worldwide passenger traffic. Passenger traffic rose about 10 pct worldwide in 1985. Most officials predict an increase of 5 pct in 1986.

Such growth translates into increased operating revenue (up 6.3 pct worldwide last year) and profitability for major airlines.

Softer fuel prices coupled with employee concessions won by several U.S. carriers in 1985 are also helping their bottom lines.

This, in turn, transfers into good tidings for the aircraft manufacturers. They know airline fleets are aging and there is a need for replacement aircraft. When will the airlines be able to afford new airplanes? The answer appears to be: Late 1985 and all of 1986.

American Airlines, United and Northwest as well as regional carriers like Texas Air and Western have jumped into the market in the past 14 months. Other carriers are poised to place new orders, although it is unclear when these will be finalized. Final 1985 sales and delivery figures will be well above those of the last several years—and 1986 should be even better.

Meanwhile, airframe manufacturers are moving to enter the market with derivative, down-sized versions of existing planes.

However, industry officials caution that market conditions among the three major manufacturers remain competitive, which results in discounting, unique financing arrangements and other special deals, such as used aircraft returns.

ENGINES & TURBINES—The new year will mark the continuation of a long-term trend that has affected this industry for several years: Flat demand. Analysts and industry executives see no quick end to the difficulties that plague this market.

At the heart of this industry's problems is sliding demand from industrial and commercial users of electrical power. This has resulted in a halt to construction of new power plants, and a dearth of orders for giant turbine generator sets and steam supply systems.

The overcapacity extends to overseas markets, where U.S. manufacturers are hard-pressed to make inroads because of the strong dollar and aggressive foreign competitors.

The generally high generating reserve experienced by the utility companies should not reverse itself in 1986. The nuclear power industry's woes are a further drag on this segment of the market.

The oil segment of the industry continues to suffer from soft demand. Imports are impacting the hydropower end of the industry.

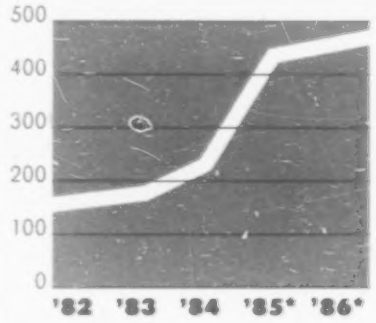
However, there are a few potential bright spots. The general economic pickup has aided diesel engine makers and the outlook for construction equipment. On the energy side, slowly increasing demand for energy efficient co-generation facilities eventually will aid those manufacturers. This segment has begun to grow and is helping large manufacturers like Westinghouse and General Electric. But sustained growth is still a few years away.

Aircraft engine sales are another bright spot for 1986. The upturn in commercial air traffic that began in 1984 is asserting itself in new airplane orders and engine sales. As overcapacity evaporates and new technology products are introduced, engine sales are likely to increase.

The long-awaited surge in new aircraft orders will continue right through 1986.

Commercial Airplane Orders

No. of Planes

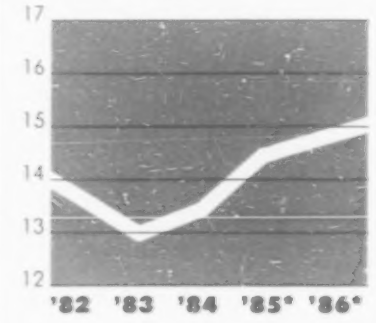


Source: Airbus Industrie, Boeing and McDonnell Douglas

*1A estimate

Engines and Turbines Shipments

In Billions of Dollars



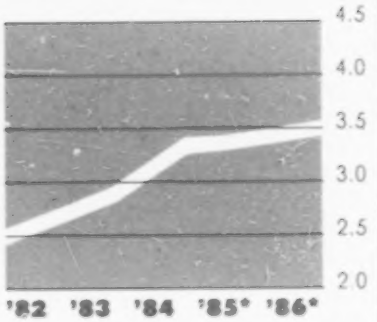
Source: U.S. Department of Commerce

*1A estimate

WELDING; HEAT TREATMENT

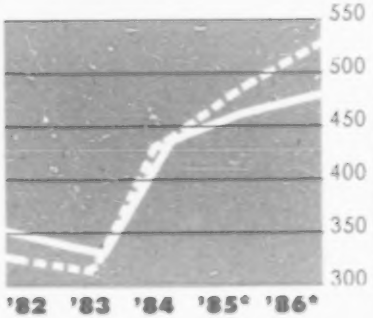
Some welding executives see 1986 as a long, dry year for their industry.

Welding Shipments
In Billions of Dollars



*IA estimate

Heat Treatment
In Millions of Dollars



Sales of Commercial Heat Treaters
Heat Processing Equipment Orders
Source: Industrial Heating Equipment Assn., Metal Treating Institute
*IA estimate

WELDING—During the first eight months of 1985, overall sales of filler metals were down more than 4 pct in dollars and about 6 1/2 pct in lbs from 1984. Excluding gases, cutting and resistance welding, equipment (which represents about 40 pct of the total market) was up 3 pct.

Some executives see 1986 as being a long, dry year for welding. No particular improvement is expected.

There will be a few bright spots, however. They will be robots and automation. Robotic spot welding, as used in what has been a healthy automotive industry, should enjoy a very good year.

Improvements are also seen in building construction, bridge repair, aerospace and defense.

On the other side of the ledger, the weak markets include the following long list: Barges, railcars, heavy fabrication, pipelines, off-highway equipment, farm equipment, power plants, chemical plants and refineries.

One major manufacturer described 1985 as a good year and said 1986 should be an incremental improvement over last year.

There's an emergence of small fabricators all over the country. Many of these companies have been formed within the last two years.

To some extent, this element seems to be replenishing the traditional large welding users which have shrunk considerably over the past few years.

Imports still only represent about 9 pct of the U.S. market, but most of this volume is sold through welding distributors. That is one reason why the statistics released through the National Welding Supply Association (NWSA), Philadelphia, appear to be very healthy. Still, the NWSA figures were the best ever in 1985, and more of the same seems imminent in 1986.

HEAT TREATMENT—A star performer in the 1986 capital goods market may well be industrial heating equipment.

Always volatile, it nonetheless managed an 11 pct gain in 1985, after a 34 pct gain in 1984. It scored the hard way, with an up-and-down year that ranged from a 21 pct gain in the first quarter that plunged 22 pct in the second quarter.

And just about the time a downward revision was cranked into the computers, the third quarter zoomed up by 44 pct over the previous period. The fourth quarter was a little more moderate, up possibly 10 pct.

What may prove significant, however, was a late breaking gain in both orders and inquiries. There were inklings of this as early as July, but the trend continued into December, some producers report. Automotive is one factor the optimists are looking at with hope. So are aerospace, defense and electronics.

By contrast, the industrial heat treat plants are considerably more cautious. That is weighted heavily by concern in the Midwest over important markets like trucks, construction machinery and farm equipment. It also reflects the conservative forecasts coming from the foundry industry.

Heat treaters probably finished 1985 with a dollar gain of about 6 pct. Shops in the Midwest were down while the West and East were up. So when they look at 1986, heat treaters are talking of not more than 3 pct, and in the Midwest of declines of perhaps 5 pct.

The difference in the regions is impressive. Some plants in the East and South were running seven days a week into December, which is a pretty strong rate for that period. The West Coast, helped by aerospace, defense and electronics, was also performing well.

FASTENERS; SCREW MACHINE PRODUCTS

FASTENERS—Fasteners fall into two major categories, "standards" and "specials." Standard products are high volume, low unit cost items and the dwindling number of domestic companies that make these items face a stiff competition from their overseas rivals.

By contrast, sales of special fasteners, products built to particular specifications, appear to be holding up. Their success, and the higher value price tag they carry, offset the dwindling sales of the domestic makers of standard fasteners.

According to the U.S. Commerce Department, sales last year totaled $4.1 billion, up slightly from $3.9 billion in 1984. Commerce officials estimate 1986 sales will duplicate 1985 totals.

What slight success the industrial fastener industry had during 1985 can be attributed largely to the automotive industry. Cars and trucks account for an estimated one-third of fastener sales (by dollar value).

Fastener makers that depend on Detroit could see their sales stall this year.

A surge of foreign car buying began during the last quarter of 1985 and should continue into 1986. Also, Japanese carmakers plan to export 25 pct more vehicles to the U.S. this year.

If the largest market for fasteners is faltering, another major market is picking up steam. Commercial aircraft production, after several years of dormancy, has begun to take off. Several major carriers have placed major orders for new aircraft and more are expected to follow.

Another major user of fasteners is the industrial machinery industry. However, with evidence mounting that firms are cutting back on capital equipment expenditures, sales to this market should drop off, at least through the first half of 1986.

SCREW MACHINE PRODUCTS—Like many industries, the screw machine products industry anticipated a good year in 1985. And with good cause for optimism.

Shipments, which had been flat during 1982 and 1983 recession period at the $2.4 billion level, rose during 1984 as business activity increased. Early estimates predicting $2.8 billion in shipments in 1984 proved correct.

The business climate since 1984 has continued at about the $2.8—$2.9 billion level and is expected to remain there during the first half of 1986. The last half of 1986 is expected to soften somewhat, for no other reason than the fact that no one sees any positive programs or industry changes that would improve sales significantly.

Industry specialists report that actual shipments during 1985 are dropping off as the year ends and that when the Department of Commerce final figures are reported about two years hence the falloff may be as much as 3 pct.

Predictions about future shipments in 1986 range from the same (flat) to a decline of as much as 6 pct from 1985's shipments.

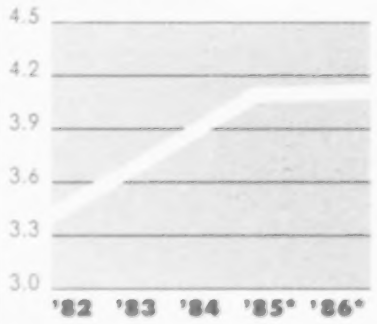
The industry apparently is holding its own regarding numbers of businesses engaged in producing screw machine products.

There are between 1,700 and 1,800 large and small firms involved, not including captive shops.

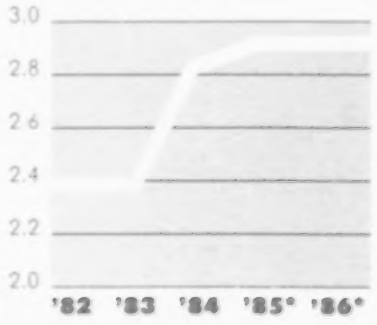
The shops are usually located close to customer plants so that it is almost an extension of some customer's engineering and production lines. Where it has involved mass production, with long runs, and is capital intensive with low labor content, some shops are now being confronted with the need for shorter runs of a wider variety of parts for faster deliveries.

Fastener makers that depend on Detroit could see their sales stall this year.

Fasteners, Sales
In Billions of Dollars



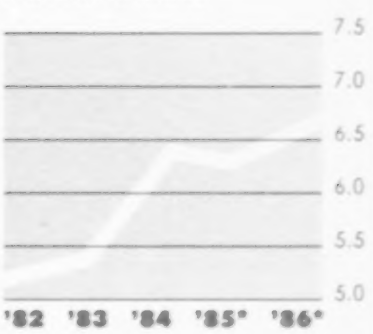
Screw Machine Products Shipments
In Billions of Dollars



STAMPINGS; GEARS

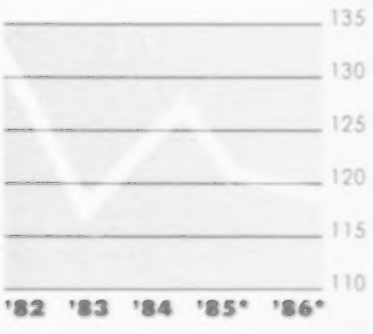
Stamping executives don't expect much change in either production or demand in 1986.

Stampings
Shipments
In Millions of Dollars



Based on the average of a control group whose shipments total more than $500 million annually
Source: American Metal Stamping Assn
*IA estimate

Gears
Bookings



Based on average monthly bookings 1977=100
Source: American Gear Manufacturers Assn
*IA estimate

STAMPINGS—Stamping industry executives see their markets moving a little ahead of 1985 in 1986. Most characterized last year as 'moderately good' for their industry.

Some stamping executives don't expect much change in either production or demand in 1986 from 1985. An automotive industry supplier believes his 1986 business will be strong, with no difference in percentage from last year.

Much of the past two years' momentum in stamping orders was provided by the auto industry. Auto sales are likely to decelerate in 1986, several stamping executives say, but not enough to make a big dent in their orders.

One industry spokesman says he expects the auto market to remain strong for much of the first half, in part because of the auto industry's sales incentive plans.

Although the automakers are using more injection molded plastic, stamping executives say these materials will have little effect on their sales this year and for the next five years.

Record appliance sales last year also helped the stamping industry. Most expect this market to hold up well through the year.

One sour note: Housing starts, which heavily influence appliance sales, have been off for the past three months. This will catch up to appliance sales by the second half, but the replacement market isn't expected to slip.

Stampers also see more softening in the office machines and computer segments, noting sizeable worker layoffs, but they are optimistic this won't hit their orders this year.

Because of that slippage one stamper said he's picking up more business from the medical and surgical equipment makers to balance out his order books.

GEARS—Gear industry executives see more "blahs" than "hurrahs" from 1986—no recession, but little, if any, real growth.

One Midwestern gear manufacturer summed it up this way, "Even if the dollar weakens more and interest rates drop, I think 1986 will be a tougher row to hoe than 1985."

In lagging the general economy by six to nine months, gearmakers won't really feel the second-half 1985 slowdown until the first quarter of this year. Or later.

One gear manufacturer predicts his 1986 sales could rise 2 or 3 pct ahead of last year; another said he would be lucky "if he didn't go down."

An anticipated bland 1986 isn't hard to explain.

However, one driving force behind precision and commercial-type gears has been car sales. Although inflated by incentives last year, auto sales are not expected to tail off sharply this year, so gear suppliers are looking forward to more of the same here. There have been recent reports of a slump in defense contracts. Orders may bounce back, but gearmakers fear the push to reduce the deficit will undoubtedly cut more from the military budget.

Of the capital goods markets, the pulp and paper and water and wastewater treatment sectors are reported to be the only active markets, so gear manufacturers don't envision a pickup in orders for their 'big stuff.'

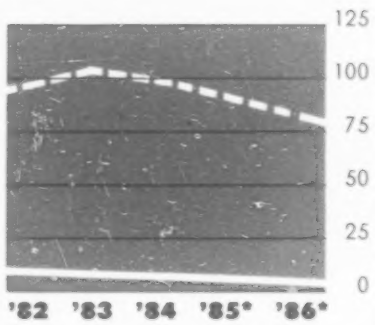
On the other hand, they do contemplate some solid contracts for updating, parts or repair work from the capital goods sector.

Gear's big bogeyman—imports—will continue to harass the industry through 1986, despite the devalued U.S. dollar. As for exports, one gear industry official concluded, "What they (foreigners) do well we let in—what we do well, they won't let in."

SHIPBUILDING; RAILCARS

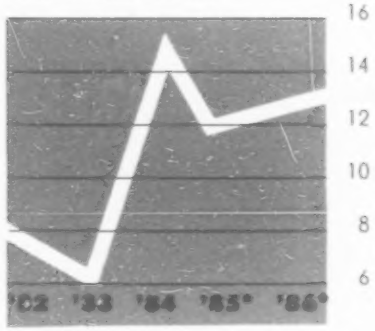
The only strength in the shipbuilding industry is in Naval ship construction.

Shipbuilding
No. of vessels



Commercial, 1,000 gross tons or over
Naval, 1,000 light displacement tons
Source: Shipbuilders Council of America
*IA estimate

Rail Car Orders
In Thousands of Units



Source: American Railway Car Institute
*IA estimate

SHIPBUILDING—Commercial shipbuilding continues its downward trend. Only 100,000 gross tons of large ships will be constructed next year. By comparison, the 1985 and 1984 figures were 230,000 and 240,000 gross tons, respectively.

The only strength in the industry is in Naval ship construction, but even that once booming activity is beginning to dwindle.

The number of vessels under construction and/or on order has gone from 93 to 105 to 100 to 83 in the past four years. Next year the number of ships under construction is expected to drop to 78.

"The boom years of the Reagan Administration are a thing of the past," noted one shipbuilding executive. "It looks like we will be moving into construction years like we had during the Carter Administration."

Actually, it's not all that bad. New orders in 1977, for example, stood at 15 and they will be expected to reach 21 in 1986.

This year appears to be an 86 vessel year. Possible new orders in fiscal year 1986 number about 21 new vessels, but the expected delivery of 26 vessels will bring the total number of ships under construction or on order down to 81.

Ship overhaul work continues at a steady pace with Newport News Shipbuilding being the latest beneficiary. It received a $205 million Navy contract for overhaul planning for the nuclear aircraft carrier Dwight D. Eisenhower.

Offshore rig construction is showing little sign of improvement. In 1981, for example, 219 rigs were under construction throughout the world, 66 of them in the U.S. In 1984, as many as 50 offshore drilling rigs were being built worldwide, but only three in the U.S.

RAILCARS—The railcar construction industry has just closed out a 12,000 to 13,000 year, a far cry from the late 1970s when the industry's annual orders totaled 100,000 or more cars.

According to the Association of American Railroads (AAR) in Washington, D.C., orders for new freight cars last October totaled 980, compared with only 153 in September and 1,578 in October 1984. Cars placed in service last October totaled 1,169, compared with 1,020 in September and 1,295 in October.

As of Nov. 1, 1985, the backlog of cars on order but undelivered was 2,394, compared with 2,583 on Oct. 1, and 5,899 on Nov. 1, 1984.

As of Nov. 1, the average monthly backlog was 3,755, compared with 6,350 the previous year.

Meanwhile, the AAR reported that 69 new locomotives were placed in service last October, compared with 75 in September and 35 in October 1984.

The railroads are just not buying equipment and there is still surplus out there. There will be some purchases next year, industry members say, but they won't be much more than this year, maybe 12,000 to 13,000 cars.

Of the 80,000 cars ordered over the past five years, the railroads have purchased less than 5 pct of them. Private car companies and leasing companies bought the rest.

Next year doesn't look like it will be much better, either. A 13,000 car year is about what can be expected.

As one industry spokesman phrased it: "Somewhere along the line, something has to break. Everybody is working on innovations to make railcars more efficient."

Carbuilders and component manufacturers are both into this kind of activity. An example is the high-productivity integral train.

ANNUAL REVIEW OF METAL PRICES AND PRODUCTION

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World Steel Production

Raw steel, thousands of metric tons

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985*
Argentina	2,208	2,410	2,684	2,786	3,199	2,687	2,541	2,900	2,900	2,600	2,800
Australia	7,869	7,794	7,338	7,596	8,119	7,589	7,635	6,400	5,600	6,200	6,300
Austria	4,069	4,476	4,093	4,335	4,917	4,623	4,656	4,300	4,400	4,900	4,600
Belgium	11,582	12,145	11,256	12,601	13,442	12,322	12,283	10,000	10,200	11,300	10,700
Brazil	8,387	9,253	11,253	12,205	13,893	15,309	13,213	13,000	14,700	18,400	20,200
Bulgaria	2,265	2,460	2,589	2,469	2,482	2,567	2,483	2,600	2,800	2,800	2,500
Canada	13,025	13,290	13,631	14,899	16,054	15,901	14,811	11,900	12,800	14,700	14,500
China	23,903	20,459	23,740	31,780	34,484	37,121	35,630	37,100	40,000	43,400	45,600
Czechoslovakia	14,324	14,693	15,054	15,294	14,817	14,925	14,270	15,000	15,000	15,500	15,300
France	21,531	23,227	22,094	22,844	23,360	23,176	21,261	18,400	17,600	19,000	19,000
West Germany	40,412	42,413	38,984	41,253	46,040	43,838	41,610	35,900	35,700	39,400	41,200
East Germany	6,480	6,740	6,850	6,976	7,024	7,308	7,467	7,200	7,200	7,500	7,500
Hungary	3,671	3,652	3,723	3,773	3,907	3,767	3,645	3,700	3,600	3,800	3,800
India	7,791	9,364	10,009	10,099	10,126	9,514	10,780	11,000	10,200	10,500	10,900
Italy	21,865	23,455	23,335	24,283	24,250	25,501	24,777	24,000	21,800	24,000	23,900
Japan	102,313	107,399	102,405	102,105	111,748	111,395	101,676	99,500	97,200	105,600	105,900
North Korea	2,400	3,000	4,000	5,080	5,400	5,800	5,500	5,800	6,100	6,500	6,500
South Korea	1,994	3,515	4,347	4,969	7,610	8,558	10,753	11,800	11,900	13,000	13,400
Luxembourg	4,624	4,565	4,329	4,790	4,949	4,618	3,791	3,500	3,300	4,000	4,000
Mexico	5,272	5,298	5,601	6,711	7,005	7,099	7,605	7,100	6,900	7,500	6,900
The Netherlands	4,817	5,178	4,923	5,583	5,806	5,264	5,464	4,400	4,500	5,700	5,500
Poland	15,007	15,640	17,841	19,251	19,218	19,485	15,719	14,800	16,200	16,600	16,000
Rumania	9,549	10,970	11,457	11,780	12,309	13,175	13,025	13,100	12,600	14,300	14,000
South Africa	6,831	7,106	7,295	7,902	8,876	9,068	9,004	8,200	7,000	7,700	8,000
Spain	11,102	10,982	11,169	11,339	12,248	12,672	12,919	13,200	13,000	13,500	14,000
Sweden	5,611	5,139	3,968	4,327	4,700	4,237	3,770	3,900	4,200	4,700	4,800
United Kingdom	19,773	22,396	20,467	20,367	21,523	11,342	15,573	12,700	15,000	15,100	15,700
U.S.S.R.	141,325	144,805	146,655	151,400	149,087	147,931	148,517	147,200	152,500	154,300	154,000
United States	105,816	116,120	114,700	124,002	123,276	101,696	108,782	67,600	76,800	83,900	79,000
Yugoslavia	2,916	2,751	3,182	3,456	3,535	3,634	2,977	3,900	4,100	4,200	4,600
Others	13,548	14,970	17,672	21,061	24,612	25,748	22,749	24,300	13,600	15,100	15,100
Total	642,980	675,511	675,635	717,159	746,448	716,018	706,856	645,200	663,200	709,900	695,700

*Estimates. Source: International Iron and Steel Institute.

U.S. Yearly Raw Steel Production*

Net Tons

	Openhearth		Basic Oxygen Process		Bessemer**		Electric‡		
	Production	Percent of Total Output	Production	Percent of Total Output	Product	Percent of Total Output	Production	Percent of Total Output	Total Production
1954	80,327,494	91.0			2,584,104	2.9	5,436,054	6.1	88,311,652
1955	105,359,417	90.0	307,279		3,319,517	2.8	8,049,872	7.2	117,036,085
1956	102,840,585	89.2	506,338		3,227,997	2.8	6,641,229	8.0	115,216,149
1957	101,657,776	90.2	611,508		2,475,138	2.2	7,970,574	7.6	112,714,996
1958	75,879,394	89.0	1,323,361	1.5	1,395,985	1.6	6,656,145	7.9	85,254,885
1959	81,668,997	87.3	1,864,338	2.0	1,380,283	1.5	8,532,514	9.2	93,446,132
1960	86,367,506	87.0	3,346,150	3.3	1,189,196	1.5	8,378,743	9.2	99,281,601
1961	84,502,071	86.2	3,967,158	4.0	881,060	0.89	8,664,203	8.9	98,014,492
1962	82,957,318	84.8	5,552,697	5.2	804,964	0.8	9,012,806	9.2	98,327,785
1963	88,833,925	81.3	8,544,078	7.8	962,659	0.9	10,920,287	10.0	109,260,949
1964	98,097,499	77.2	15,442,186	12.2	857,586	0.6	12,678,496	10.0	127,075,767
1965	94,193,225	71.7	22,878,605	17.4	585,965	0.4	13,803,806	10.5	131,461,601
1966	85,024,572	63.4	33,928,374	25.4	278,119	0.2	14,870,363	11.0	134,101,428
1967	70,690,028	55.6	41,434,350	32.5	**	**	15,088,545	11.9	127,212,923
1968	65,836,000	50.1	48,812,000	37.2	**	**	16,814,000	12.7	131,462,000
1969	60,894,041	43.1	60,235,671	42.7	**	**	20,131,950	14.2	141,261,662
1970	48,022,000	36.6	63,330,000	48.2	**	**	20,162,000	15.2	131,514,000
1971	35,559,000	29.5	63,943,000	53.1	**	**	20,941,000	17.4	120,443,000
1972	34,936,000	26.2	74,584,000	56.0	**	**	23,721,000	17.8	133,241,000
1973	39,780,000	26.4	83,260,000	55.2	**	**	27,759,000	18.4	150,799,000
1974	35,499,000	24.3	81,552,000	56.0	**	**	28,669,000	19.7	145,720,000
1975	22,161,000	19.1	71,801,000	61.5	**	**	22,680,000	19.4	116,642,000
1976	23,470,000	18.3	79,918,000	62.4	**	**	24,612,000	19.3	128,000,000
1977	20,043,000	16.0	77,408,000	61.8			27,882,000	22.2	125,333,000
1978	21,310,000	15.5	83,464,000	61.0			32,287,000	23.5	137,031,000
1979	19,158,000	14.0	83,256,000	61.0			33,927,000	23.0	136,341,000
1980	13,054,000	11.7	67,615,000	60.4			31,166,000	27.9	111,835,000
1981	13,452,000	11.1	73,731,000	60.6			34,145,000	28.3	120,828,000
1982	6,110,000	8.2	45,309,000	60.7			23,158,000	31.1	74,577,000
1983	5,951,000	7.0	52,050,000	61.5			26,615,000	31.5	84,615,000
1984	8,336,000	9.0	52,822,000	57.1			31,369,000	33.9	91,131,000
1985‡‡	7,820,000	9.0	49,680,000	57.0			29,500,000	34.0	87,000,000

*Steel in first solid state after melting suitable for further processing or sale, including ingots, steel castings and strand or pressure cast blooms, billets, slabs, or other product forms. **Included in openhearth since 1966. ‡ Includes small tonnages of crucible steel. ‡‡ IRON AGE estimate. Source: AISI

U.S. Monthly Raw Steel Production, Net Tons

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Jan	12,049,404	6,416,004	10,352,748	8,390,914	9,526,000	11,830,469	10,577,000	10,633,000	12,014,599	11,083,447	11,247,855	11,273,740	10,001,026
Feb	11,126,806	6,239,098	9,698,216	8,222,352	9,485,359	10,865,869	10,249,000	10,041,000	11,744,896	10,915,021	10,498,356	10,874,377	9,979,752
Mar	11,564,683	7,086,389	10,583,943	10,080,014	10,496,987	12,344,963	12,083,000	10,963,000	12,721,053	12,400,375	11,885,581	12,645,241	11,587,946
Apr	9,777,857	7,584,687	9,235,881	10,695,362	10,560,651	11,966,162	11,570,000	10,349,000	12,450,040	12,142,751	11,385,675	12,564,686	11,587,946
May	8,830,472	8,980,626	7,535,506	11,489,524	11,060,357	12,012,449	12,191,000	10,572,000	12,700,325	12,356,394	11,574,485	12,920,414	11,936,558
June	7,404,873	8,551,856	6,691,785	10,365,154	10,184,634	11,593,450	11,403,000	9,576,000	11,905,936	11,810,287	11,323,096	11,490,602	10,979,970
July	6,350,924	8,091,956	6,174,187	8,653,544	10,105,609	11,550,968	10,791,000	9,670,000	11,452,380	11,365,146	10,780,960	9,942,264	10,341,230
Aug	6,836,000	8,660,527	7,097,916	7,781,560	10,515,268	11,334,149	11,097,000	10,300,000	8,966,712	11,420,995	10,764,738	5,773,736	10,842,279
Sept	6,458,421	8,904,000	7,251,023	7,858,009	10,668,978	9,949,355	11,280,000	10,438,000	8,085,770	11,523,106	10,726,618	7,678,110	10,910,540
Oct	6,868,380	9,173,170	7,780,538	8,483,160	11,568,248	9,295,828	11,509,000	11,171,000	9,006,237	12,323,544	10,698,720	8,211,000	11,656,841
Nov	6,171,940	8,745,966	7,846,057	8,489,259	11,292,070	8,822,186	10,887,000	11,299,000	9,590,000	11,916,305	10,008,000	8,053,140	11,398,316
Dec	5,839,641	9,568,954	8,079,885	8,753,117	11,611,606	9,627,156	10,435,000	11,353,000	10,421,000	11,812,097	10,438,000	8,783,805	11,878,199
Total	99,281,601	96,014,492	98,327,785	109,260,949	127,075,767	131,461,601	134,101,000	127,213,000	131,462,000	141,261,662	131,514,000	120,442,526	133,241,105

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Jan	12,372,882	12,726,000	11,584,190	9,834,725	9,089,254	10,301,277	11,104,826	10,700,736	10,590,135	7,737,389	5,570,000	7,970,000	6,984,000
Feb	11,625,734	11,598,000	10,861,663	9,906,523	8,858,896	9,643,742	10,562,363	10,331,868	10,038,344	7,177,979	5,676,000	8,142,000	6,851,000
Mar	13,088,378	12,758,000	11,980,244	11,294,279	11,049,228	11,082,593	12,575,967	11,438,944	11,744,370	8,048,621	7,127,000	9,056,000	8,269,000
Apr	12,788,629	12,442,000	10,667,490	11,439,185	11,166,557	11,528,357	12,195,612	10,668,203	11,242,726	7,005,717	7,292,000	8,997,000	7,872,000
May	13,174,066	12,752,000	9,863,557	12,106,009	12,200,852	12,320,398	12,788,673	9,225,991	11,422,988	6,678,457	7,412,000	9,174,000	7,830,000
June	12,487,656	12,185,000	8,743,842	11,604,506	11,383,812	11,860,523	12,229,996	7,500,772	10,451,364	6,050,062	6,993,000	7,945,000	7,292,000
July	12,290,250	12,155,000	8,370,426	11,399,954	10,319,277	11,387,671	11,821,349	6,795,726	10,159,544	5,718,617	6,921,000	7,460,000	7,010,000
Aug	12,181,330	11,837,000	8,648,260	11,128,102	10,390,460	11,549,515	11,309,493	7,018,547	10,120,254	5,537,970	7,020,000	6,915,000	7,130,000
Sept	12,229,008	11,849,000	9,295,321	10,462,577	10,050,311	11,467,224	10,541,320	7,766,905	9,618,072	5,298,622	7,134,000	6,378,000	6,904,000
Oct	12,875,791	12,617,045	9,213,736	10,278,000	10,442,000	12,105,000	10,809,966	9,441,159	9,057,756	5,262,370	7,690,000	6,703,000	7,351,000*
Nov	12,586,509	11,614,000	8,709,090	9,494,000	9,748,000	11,654,000	9,997,000	10,057,000	7,962,000	4,546,000	7,263,000	6,422,000	6,987,000*
Dec	12,721,577	10,960,000	8,845,511	9,215,000	10,031,000	11,812,000	9,996,000	10,180,000	7,671,000	4,456,000	6,991,000	6,013,000	6,500,000*
Total	150,798,927	145,720,000	116,783,332	128,000,000	125,333,000	137,031,000	136,341,000	111,835,000	120,828,000	74,577,000	84,615,000	90,528,000	87,000,000*

*Estimate
Source: AISI
Steel in first solid state after melting suitable for further processing or sale, including ingots, steel castings and continuous or pressure cast blooms, billets, slabs, or other product forms.

U.S. Raw Steel Production, Rate of Capability Utilization

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1910	1982	1983	1984	1985
Jan	98.4	111.2	102.6	104.1	104.3	90.6	114.5	117.8	90.4	74.4	66.8	77.2	83.5	80.7	79.9	59.3	43.4	69.6	60.9
Feb	102.9	116.7	111.8	107.6	111.4	99.7	119.1	118.8	90.8	80.1	75.1	80.5	87.9	85.3	83.7	60.4	49.0	76.0	66.1
Mar	101.5	117.7	114.8	110.0	117.0	107.3	121.1	119.1	99.4	85.4	81.2	82.1	94.5	86.4	84.6	61.7	55.5	79.1	72.1
Apr	99.0	119.1	116.1	108.9	120.2	110.8	122.3	119.0	84.9	88.4	83.3	86.5	93.4	83.0	87.7	55.2	58.9	80.8	71.6
May	97.9	117.5	114.4	107.1	119.6	110.5	121.9	116.0	75.9	90.8	88.1	91.5	94.5	69.6	86.2	50.9	57.9	79.8	68.9
June	91.6	113.9	113.0	108.3	109.9	105.0	119.4	116.5	69.6	89.7	84.9	91.1	93.7	58.4	81.5	47.4	56.5	71.4	66.3
July	89.0	106.0	105.2	99.8	90.0	95.7	113.8	112.5	65.1	84.6	76.7	85.1	89.9	53.1	77.6	43.8	54.3	65.3	62.1
Aug	95.3	82.9	105.7	99.6	53.4	100.4	112.7	109.6	67.3	82.8	77.2	86.3	86.0	54.8	77.3	42.4	55.1	60.5	63.2
Sept	99.8	77.3	110.2	102.6	73.4	104.8	117.0	113.3	74.7	80.4	77.2	88.6	82.6	62.7	75.9	41.9	57.8	57.7	63.4
Oct	103.4	83.4	114.1	99.0	76.0	107.9	119.2	116.8	69.0	75.8	77.7	88.1	84.4	72.2	68.7	40.2	62.0	49.7	65.2*
Nov	108.1	91.7	114.0	95.7	77.0	109.0	120.4	111.1	67.4	72.2	75.0	89.4	80.6	79.5	62.8	35.9	58.7	49.4	59.0*
Dec	110.6	96.5	109.3	96.6	81.3	109.9	117.7	101.4	66.2	67.8	74.7	87.7	78.0	77.8	58.6	34.0	54.7	45.1	56.0*
Average	100.0	103.1	111.0	103.4	94.7	104.5	118.5	114.5	76.2	80.9	78.4	86.8	87.6	72.8	78.3	48.4	56.2	65.3	64.7*

*Estimate
Rate of Capability Utilization: begun January, 1976; revised back to January, 1975.
Source: AISI

STEEL PRICES

Composite Prices by Periods

Period	Cents per Pound
April 17, 1978 to July 31, 1978	17.670
July 31, 1978 to Dec. 31, 1978	18.719
Jan. 1, 1979 to April 1, 1979	19.549
April 1, 1979 to May 13, 1979	19.606
May 13, 1979 to July 1, 1979	19.668
July 1, 1979 to July 9, 1979	20.095
July 9, 1979 to Oct. 1, 1979	20.331
Oct. 1, 1979 to Jan. 6, 1980	20.547
Jan 7, 1980 to Mar. 1, 1980	21.036
Mar. 2, 1980 to Mar. 9, 1980	21.130
Mar. 10, 1980 to Mar. 31, 1980	21.180
Apr. 1, 1980 to July 6, 1980	21.279
July 7, 1980 to Oct. 4, 1980	21.736
Oct. 5, 1980 to Nov. 30, 1980	22.014
Dec. 1, 1980 to Dec. 31, 1980	22.186
Jan. 1, 1981 to Feb. 1, 1981	22.801
Feb. 2, 1981 to Feb. 28, 1981	23.362
Mar. 1, 1981 to Mar. 28, 1981	23.548
Mar. 29, 1981 to June 20, 1981	23.776
June 21, 1981 to Sept. 26, 1981	24.349
Sept. 27, 1981 to April 3, 1982	25.196
April 4, 1982 to Feb. 5, 1983	26.290
Feb. 6, 1983 to Feb. 13, 1983	25.954
Feb. 14, 1983 to Aug. 31, 1983	26.217
Sept. 1, 1983 to Feb. 12, 1984	26.822
Feb. 13, 1984 to May 13, 1984	26.939
May 14, 1984 to June 30, 1984	27.405
July 1, 1984 to Dec. 31, 1985	27.582

The Iron Age Finished Steel Composite Price

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
January	6.398	6.445	6.545	6.794	7.263	7.839	9.014	9.363	9.456	12.739
February	6.398	6.445	6.545	6.904	7.351	7.839	8.998	9.363	9.480	12.908
March	6.063	6.445	6.545	6.961	7.434	8.011	8.998	9.363	9.480	12.908
April	6.063	6.445	6.545	6.961	7.504	8.055	8.998	9.363	10.033	12.908
May	6.063	6.445	6.545	7.042	7.540	8.055	8.998	9.363	10.033	12.908
June	6.376	6.445	6.545	7.042	7.613	8.134	8.998	9.363	11.108	12.970
July	6.376	6.445	6.545	7.179	7.613	8.480	8.998	9.363	12.075	12.970
August	6.376	6.445	6.545	7.251	7.613	8.726	8.998	9.363	12.346	12.970
September	6.433	6.445	6.545	7.251	7.613	8.977	8.998	9.363	12.389	12.961
October	6.445	6.445	6.545	7.251	7.613	8.977	8.998	9.433	12.433	13.000
November	6.445	6.445	6.545	7.251	7.613	8.977	8.998	9.433	12.433	13.000
December	6.445	6.510	6.545	7.263	7.613	8.977	8.998	9.433	12.433	13.000
Average	6.399	6.464	6.600	7.091	7.550	8.429	8.998	9.390	11.181	13.150

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
January	13.690	15.146	16.294	19.584	20.943	22.801	25.196	25.297	26.822	27.582
February	13.690	15.146	17.304	19.584	21.036	23.362	25.196	25.480	26.939	27.582
March	13.690	15.146	17.304	19.584	21.168	23.548	25.196	26.217	26.939	27.582
April	13.690	15.146	17.470	19.606	21.279	23.776	25.297	26.217	26.939	27.582
May	13.835	15.146	17.470	19.631	21.736	23.776	25.297	26.217	27.405	27.582
June	14.166	15.146	17.470	19.668	21.736	24.232	25.297	26.217	27.405	27.582
July	14.166	15.441	17.470	20.253	21.736	24.668	25.297	26.217	27.582	27.582
August	14.166	15.441	18.215	20.315	21.736	24.668	25.297	26.217	27.582	27.582
September	14.166	16.043	18.215	20.315	21.736	24.668	25.297	26.822	27.582	27.582
October	14.166	16.043	18.215	20.543	21.882	25.196	25.297	26.822	27.582	27.582
November	14.166	16.043	18.215	20.543	22.014	25.196	25.297	26.822	27.582	27.582
December	14.860	16.043	18.215	20.543	22.286	25.196	25.297	26.822	27.582	27.582
Average	14.113	15.572	17.940	20.006	21.656	24.204	25.271	26.323	27.313	27.582

Galvanized Sheets*

At Pittsburgh, Cents Per Pound

	1974	1975	1976	1977	1978	1979
Jan	10.80	14.05	15.40	17.40	18.60	21.95
Feb	10.80	14.05	15.40	17.40	19.60	21.95
Mar	10.80	14.05	15.40	17.40	19.80	21.95
Apr	10.80	14.05	15.40	17.40	19.80	21.95
May	12.15	14.05	15.40	17.40	20.075	21.95
June	12.15	14.05	16.40	17.40	20.075	21.95
July	14.05	14.05	16.40	18.60	20.075	21.95
Aug	14.05	14.05	16.40	18.60	20.80	22.85
Sept	14.05	14.05	16.40	18.60	20.80	22.85
Oct	14.05	15.40	16.40	18.60	20.80	22.85
Nov	14.05	15.40	16.40	18.60	20.80	22.85
Dec	14.05	15.40	17.40	18.60	20.80	22.85
Average	12.65	14.39	16.07	18.00	20.18	22.32

	1980	1981	1982	1983	1984	1985
Jan	22.85	25.25	26.25	26.25	30.30	30.30
Feb	22.85	25.25	26.25	28.00	30.30	30.30
Mar	22.85	25.25	26.25	28.00	30.30	30.30
Apr	23.80	25.25	26.25	28.00	30.30	30.30
May	23.80	25.25	26.25	28.00	30.30	30.30
June	23.80	26.20	26.25	28.00	30.30	30.30
July	23.80	27.15	26.25	28.00	30.30	30.30
Aug	23.80	27.15	26.25	28.00	30.30	30.30
Sept	23.80	27.15	26.25	30.30	30.30	30.30
Oct	23.80	27.15	26.25	30.30	30.30	30.30
Nov	23.80	27.15	26.25	30.30	30.30	30.30
Dec	23.80	27.15	26.25	30.30	30.30	30.30
Average	23.56	26.30	26.25	28.62	30.30	30.30

*Hot-Dipped, 10 ga.

Hot-Rolled Sheets

At Pittsburgh, Cents Per Pound

	1974	1975	1976	1977	1978	1979
Jan	8.55	11.00	11.70	13.25	14.175	16.60
Feb	8.55	11.00	11.70	13.25	14.175	16.60
Mar	8.55	11.00	11.70	13.25	14.175	16.60
Apr	8.55	11.00	11.70	13.25	14.175	16.60
May	9.55	11.00	11.70	13.25	15.275	16.60
June	9.55	11.00	11.70	13.25	15.275	16.60
July	11.00	11.00	12.45	14.175	15.275	16.60
Aug.	11.00	11.00	12.45	14.175	15.80	17.50
Sept.	11.00	11.00	12.45	14.175	15.80	17.50
Oct.	11.00	11.70	12.45	14.175	15.80	17.50
Nov.	11.00	11.70	12.45	14.175	15.80	17.50
Dec.	11.00	11.70	13.25	14.175	16.80	17.50
Average	9.94	11.17	12.14	13.712	15.12	16.97

	1980	1981	1982	1983	1984	1985
Jan.	17.50	19.50	20.80	20.80	23.75	23.75
Feb.	17.50	19.50	20.80	22.05	23.75	23.75
Mar.	17.50	19.50	20.80	22.05	23.75	23.75
Apr.	18.45	19.50	20.80	22.05	23.75	23.75
May.	18.45	19.50	20.80	22.05	23.75	23.75
June.	18.45	20.15	20.80	22.05	23.75	23.75
July.	18.45	20.80	20.80	22.05	23.75	23.75
Aug.	18.45	20.80	20.80	22.05	23.75	23.75
Sept.	18.45	20.80	20.80	23.75	23.75	23.75
Oct.	18.45	20.80	20.80	23.75	23.75	23.75
Nov.	18.45	20.80	20.80	23.75	23.75	23.75
Dec.	18.45	20.80	20.80	23.75	23.75	23.75
Average	18.21	20.20	20.80	22.53	23.75	23.75

Cold-Rolled Sheets

At Pittsburgh, Cents Per Pound

	1974	1975	1976	1977	1978	1979
Jan	10.30	13.00	13.90	15.80	16.90	19.75
Feb	10.20	13.00	13.90	15.80	16.90	19.75
Mar	10.30	13.00	13.90	15.80	16.90	19.75
Apr	10.30	13.00	13.90	15.80	16.90	19.75
May	10.30	13.00	13.90	15.80	18.175	19.75
June	10.30	13.00	13.90	15.80	18.175	19.75
July	13.00	13.00	14.80	16.90	18.175	19.75
Aug	13.00	13.00	14.80	16.90	18.80	20.75
Sept	13.00	13.00	14.80	16.90	18.80	20.75
Oct	13.00	13.90	14.80	16.90	18.80	20.75
Nov	13.00	13.90	14.80	16.90	18.80	20.75
Dec	13.00	13.90	15.80	16.90	18.80	20.75
Average	11.82	13.22	14.43	16.35	17.17	20.16

	1980	1981	1982	1983	1984	1985
Jan	20.75	23.15	24.65	24.65	28.15	28.15
Feb	20.75	23.15	24.65	26.15	28.15	28.15
Mar	20.75	23.15	24.65	26.15	28.15	28.15
Apr	21.90	23.15	24.65	26.15	28.15	28.15
May	21.90	23.15	24.65	26.15	28.15	28.15
June	21.90	23.90	24.65	26.15	28.15	28.15
July	21.90	24.65	24.65	26.15	28.15	28.15
Aug	21.90	24.65	24.65	26.15	28.15	28.15
Sept	21.90	24.65	24.65	28.15	28.15	28.15
Oct	21.90	24.65	24.65	28.15	28.15	28.15
Nov	21.90	24.65	24.65	28.15	28.15	28.15
Dec	21.90	24.65	24.65	28.15	28.15	28.15
Average	21.62	23.96	24.65	26.84	28.15	28.15

Structural Steel Shapes

At Pittsburgh, Cents Per Pound

	1980	1981	1982	1983	1984	1985
Jan	18.00	19.90	22.90	23.90	23.90	23.90
Feb	18.00	19.90	22.90	23.90	23.90	23.90
Mar	18.90	19.90	22.90	23.90	23.90	23.90
Apr	18.90	21.65	23.90	23.90	23.90	23.90
May	18.90	21.65	23.90	23.90	23.90	23.90
June	18.90	21.65	23.90	23.90	23.90	23.90
July	18.90	21.65	23.90	23.90	23.90	23.90
Aug	18.90	21.65	23.90	23.90	23.90	23.90
Sept	18.90	21.65	23.90	23.90	23.90	23.90
Oct	18.90	22.90	23.90	23.90	23.90	23.90
Nov	18.90	22.90	23.90	23.90	23.90	23.90
Dec	18.90	22.90	23.90	23.90	23.90	23.90
Average	19.00	21.52	23.65	23.90	23.90	23.90

Special Quality Bars

At Pittsburgh, Cents Per Pound

	1980	1981	1982	1983	1984	1985
Jan	21.00	22.60	23.95	23.95	25.80	27.05
Feb	21.00	22.60	23.95	25.80	25.80	27.05
Mar	21.00	22.60	23.95	25.80	25.80	27.05
Apr	21.00	22.60	23.95	25.80	25.80	27.05
May	21.00	22.60	23.95	25.80	25.80	27.05
June	21.00	23.95	23.95	25.80	25.80	27.05
July	21.00	23.95	23.95	25.80	27.05	27.05
Aug.	21.00	23.95	23.95	25.80	27.05	27.05
Sept.	21.00	23.95	23.95	25.80	27.05	27.05
Oct.	21.00	23.95	23.95	25.80	27.05	27.05
Nov.	22.60	23.95	23.95	25.80	27.05	27.05
Dec.	22.60	23.95	23.95	25.80	27.05	27.05
Average	21.20	23.29	23.95	25.65	26.43	27.05

Steel Plates

At Pittsburgh, Cents Per Pound

	1980	1981	1982	1983	1984	1985
Jan	19.45	21.50	24.25	24.25	25.75	25.75
Feb	19.45	21.50	24.25	25.75	25.75	25.75
Mar	19.45	23.25	24.25	25.75	25.75	25.75
Apr	20.70	23.25	24.25	25.75	25.75	25.75
May	20.70	23.25	24.25	25.75	25.75	25.75
June	20.70	23.25	24.25	25.75	25.75	25.75
July	20.70	23.25	24.25	25.75	25.75	25.75
Aug	20.70	23.25	24.25	25.75	25.75	25.75
Sept	20.70	23.25	24.25	25.75	25.75	25.75
Oct	21.50	24.25	24.25	25.75	25.75	25.75
Nov	21.50	24.25	24.25	25.75	25.75	25.75
Dec	21.50	24.25	24.25	25.75	25.75	25.75
Average	20.62	23.20	24.25	25.67	25.75	25.75

IRON ORE

Pig Iron, Production

Net Tons

Year	Basic	Bessemer	Low Phosphorous	Foundry	Malleable	All Other, incl. Direct Castings Silvery Pig Iron	Pig Iron
1974	41,190,000	1,100,000	106,000	1,438,000	1,385,000	600,000	45,909,000
1975	25,911,000	1,087,000	140,000	1,321,000	814,000	650,000	29,923,000
1976	40,994,000	1,140,000	112,000	1,484,000	980,000	474,000	45,984,000
1977	48,198,000	954,000	122,000	1,410,000	696,000	454,000	51,308,000
1978	54,497,000	995,000	110,000	1,896,000	471,000	450,000	57,679,000
1979	54,047,000	1,100,000	178,000	1,457,000	1,003,000	306,000	57,003,000
1980	44,364,000	29,000	72,000	713,000	799,000	134,000	46,721,000
1981	71,166,000	56,000	130,000	1,021,000	929,000	66,000	73,750,000
1982	42,604,000	—	56,000	234,000	377,000	33,000	43,304,000
1983	48,132,000	—	27,000	130,905	417,000	—	48,706,000
1984	51,104,000	—	27,000	199,000	570,000	—	51,904,000
1985*	50,400,000	—	26,000	196,000	562,000	—	51,200,000

*Iron Age estimate

Source: AISI

U.S. Iron Ore Supply

Year	U.S. Shipments	Exports	Imports	Net Supply
1976	76,756,254	2,913,309	44,389,538	118,232,483
1977	54,416,852	2,143,047	27,404,785	80,077,510
1978	82,611,472	4,213,194	33,616,378	112,014,606
1979	96,041,903	5,147,657	33,776,072	124,661,318
1980	68,527,004	5,609,198	25,058,200	87,896,010
1981	71,969,004	5,645,516	28,331,974	94,158,382
1982	35,464,871	3,177,620	14,715,345	47,402,596
1983	45,033,892	3,781,244	13,327,905	54,580,553
1984	50,883,000	3,560,000	14,100,000	62,488,000
1985*	46,100,000	4,900,000	16,100,000	57,600,000

*Domestic shipments minus exports, plus imports

**Estimate

Source: American Iron Ore Assn.

Tinplate

Single Reduced, 70 lb.
Dollars Per Base Box, Pittsburgh

	1974	1975	1976	1977	1978	1979
Jan	$ 9.75	$13.70	$13.70	$15.10	17.05	$19.01
Feb	9.75	13.70	13.70	15.10	17.05	19.27
Mar	10.15	13.70	15.10	15.75	17.80	19.27
Apr	10.15	13.70	15.10	15.75	17.80	20.57
May	10.15	13.70	15.10	15.75	18.00	20.57
June	11.30	13.70	15.10	15.75	18.00	20.57
July	11.30	13.30	15.10	15.75	18.00	20.57
Aug	11.30	13.30	15.10	15.75	18.00	20.57
Sept	11.30	13.30	15.10	17.05	18.00	20.57
Oct	11.30	13.30	15.10	17.05	19.10	21.93
Nov	13.45	13.70	15.10	17.05	19.10	21.93
Dec	13.45	13.70	15.10	17.05	19.10	21.93
Average	11.11	13.70	14.86	16.07	18.08	20.57

	1980	1981	1982	1983	1984	1985
Jan	$21.93	$24.94	$26.29	$26.29	$27.74	$27.74
Feb	21.93	24.94	26.29	26.29	27.74	28.99
Mar	21.93	24.94	26.29	26.29	27.74	28.99
Apr	23.31	24.94	26.29	26.29	27.74	28.99
May	23.31	24.94	26.29	26.29	27.74	28.99
June	23.31	24.94	26.29	26.29	27.74	28.99
July	23.31	24.94	26.29	26.29	27.74	28.99
Aug	21.31	24.94	26.29	26.29	27.74	28.99
Sept	21.31	24.94	26.29	27.74	27.74	28.99
Oct	21.31	24.94	26.29	27.74	27.74	30.12
Nov	21.31	24.94	26.29	27.74	27.74	30.12
Dec	21.31	24.94	26.29	27.74	27.74	30.12
Average	22.89	24.94	26.29	26.77	27.74	29.17

Hot-Rolled Strip

At Pittsburgh, Cents Per Pound

	1974	1975	1976	1977	1978	1979
Jan	8.375	11.00	11.70	13.25	14.175	16.60
Feb	8.375	11.00	11.70	13.25	14.175	16.60
Mar	8.375	11.00	11.70	13.25	14.175	16.60
Apr	8.375	11.00	11.70	13.25	14.175	16.60
May	9.50	11.00	11.70	13.25	15.275	16.60
June	9.50	11.00	11.70	13.25	15.275	16.60
July	11.00	11.00	12.45	14.175	15.275	16.60
Aug	11.00	11.00	12.45	14.175	15.80	17.50
Sept	11.00	11.00	12.45	14.175	15.80	17.50
Oct	11.00	11.70	12.45	14.175	15.80	17.50
Nov	11.00	11.70	12.45	14.175	15.80	17.50
Dec	11.00	11.70	13.25	14.175	15.80	17.50
Average	9.875	11.17	12.15	13.70	14.79	16.97

	1980	1981	1982	1983	1984	1985
Jan	17.50	19.50	20.80	20.80	23.75	23.75
Feb	17.50	19.50	20.80	22.05	23.75	23.75
Mar	17.50	19.50	20.80	22.05	23.75	23.75
Apr	18.45	19.50	20.80	22.05	23.75	23.75
May	18.45	19.50	20.80	22.05	23.75	23.75
June	18.45	20.15	20.80	22.05	23.75	23.75
July	18.45	20.80	20.80	22.05	23.75	23.75
Aug	18.45	20.80	20.80	22.05	23.75	23.75
Sept	18.45	20.80	20.80	23.75	23.75	23.75
Oct	18.45	20.80	20.80	23.75	23.75	23.75
Nov	18.45	20.80	20.80	23.75	23.75	23.75
Dec	18.45	20.80	20.80	23.75	23.75	23.75
Average	18.21	20.20	20.80	22.51	23.75	23.75

SCRAP COMPOSITES

Average of Iron Age Scrap Prices Pittsburgh Chicago, Philadelphia, Per Gross Ton

No. 1 Heavy Melt

	1980	1981	1982	1983	1984	1985
Jan	$99.67	$98.58	$84.34	$61.30	$92.70	$81.00
Feb	105.00	99.50	82.17	70.00	94.92	83.15
Mar	101.17	105.23	76.83	73.09	91.25	86.75
Apr	92.25	101.75	71.83	71.00	90.17	78.70
May	77.50	95.42	62.67	67.70	89.08	70.50
June	69.70	89.37	58.03	70.84	85.17	66.34
July	76.08	90.17	56.00	71.75	81.90	68.97
Aug	84.42	94.62	55.69	75.04	82.25	74.17
Sept	94.43	90.42	56.17	77.17	85.00	72.43
Oct	95.91	81.17	52.92	77.97	82.90	71.17
Nov	98.50	75.63	51.23	81.42	79.09	68.83
Dec	101.57	76.42	52.59	87.25	79.03	69.50*
Average	91.35	91.53	63.35	73.71	86.12	74.29*

No. 2 Bundles

	1980	1981	1982	1983	1984	1985
Jan	$62.50	$71.83	$56.50	$42.84	$59.96	$53.00
Feb	67.41	71.83	56.17	48.84	62.50	55.25
Mar	65.90	73.83	51.23	51.84	62.41	57.50
Apr	60.83	75.08	47.58	48.84	61.03	55.24
May	53.83	68.08	44.83	46.57	60.16	49.51
June	50.70	61.57	42.83	46.34	56.50	47.17
July	54.00	61.58	41.83	45.76	51.10	50.04
Aug	62.66	62.50	41.83	45.50	51.16	53.83
Sept	67.90	61.66	41.47	45.50	51.83	53.04
Oct	70.91	56.50	39.42	46.57	51.16	52.25
Nov	72.25	53.43	38.70	49.34	51.09	50.67
Dec	75.23	53.75	38.75	56.91	51.10	50.50*
Average	63.71	64.31	45.07	48.15	55.84	52.34*

*Estimate

Pittsburgh

Prices of No. 1 Heavy Melt, per Gross Ton

	1980	1981	1982	1983	1984	1985
Jan	$102.00	$104.50	$94.50	$63.90	$98.30	$83.50
Feb	106.50	105.75	91.50	73.25	103.25	88.00
Mar	105.50	116.10	85.90	78.25	100.50	92.50
Apr	98.00	110.75	75.50	75.50	100.50	81.50
May	79.50	105.10	64.50	69.10	99.75	73.00
June	69.50	100.00	61.50	72.50	94.50	70.50
July	77.75	102.50	59.00	74.50	88.10	73.50
Aug	87.50	107.10	57.50	79.70	87.25	77.50
Sept	102.90	101.50	57.50	82.50	90.00	75.10
Oct	102.50	93.00	55.25	83.90	87.70	73.50
Nov	105.25	84.90	52.50	85.50	81.00	69.50
Dec	103.10	87.25	53.75	90.00	80.70	70.50*
Average	96.00	101.54	67.41	77.46	90.80	77.39*

No. 2 Bundles

	1980	1981	1982	1983	1984	1985
Jan	$61.00	$74.50	$60.60	$43.10	$59.50	$50.50
Feb	67.50	74.50	62.50	50.75	59.50	55.00
Mar	68.70	77.00	53.70	54.50	59.50	56.50
Apr	64.50	81.50	48.75	51.50	58.50	56.50
May	58.75	73.50	46.50	51.50	59.50	56.50
June	52.70	65.70	44.50	51.50	59.50	50.50
July	54.50	64.50	44.50	51.50	54.30	52.90
Aug	63.50	64.50	44.50	51.50	53.50	54.50
Sept	66.50	64.50	42.50	51.50	53.50	54.50
Oct	66.50	63.00	40.25	51.50	53.10	54.50
Nov	69.75	60.50	38.10	52.75	52.50	53.50
Dec	73.90	60.50	37.50	59.50	50.50	53.50*
Average	63.98	68.71	46.98	51.75	56.20	53.58*

*Estimate

Chicago

Prices of No. 1 Heavy Melt, Per Gross Ton

	1980	1981	1982	1983	1984	1985
Jan	$96.50	$96.50	$83.25	$62.70	$90.10	$80.50
Feb	100.50	101.25	79.50	74.25	96.50	80.50
Mar	96.50	108.10	71.70	77.50	87.50	85.50
Apr	86.00	104.50	67.00	72.50	85.50	77.90
May	70.50	96.75	58.50	68.30	85.50	68.50
June	63.50	88.50	52.30	71.50	80.50	61.50
July	67.50	88.50	49.50	72.25	77.50	63.10
Aug	77.50	97.50	50.70	76.90	78.50	72.50
Sept	88.50	91.25	51.50	79.50	81.50	72.30
Oct	93.75	81.00	46.50	79.50	80.90	71.75
Nov	98.75	75.50	46.50	80.75	80.50	69.50
Dec	105.10	75.50	49.50	84.75	80.50	70.50*
Average	87.05	91.99	58.87	75.03	83.40	72.84*

No. 2 Bundles

	1980	1981	1982	1983	1984	1985
Jan	$54.50	$77.00	$65.50	$44.90	$60.70	$59.00
Feb	58.50	80.25	62.50	50.75	63.00	64.50
Mar	57.50	83.70	56.50	54.50	63.50	64.50
Apr	53.25	83.25	52.50	49.50	62.50	61.50
May	49.50	73.25	47.50	44.50	64.50	60.35
June	48.30	64.50	43.90	44.50	63.50	54.50
July	51.50	65.75	41.50	44.50	49.50	51.90
Aug	61.50	68.70	41.50	44.50	49.50	61.50
Sept	72.10	69.00	41.50	44.50	51.50	61.10
Oct	81.75	60.50	38.50	44.50	51.50	58.75
Nov	87.50	60.50	38.50	45.75	53.75	56.50
Dec	86.50	63.25	39.75	56.25	56.30	57.50*
Average	63.24	70.51	47.43	47.36	57.48	58.64*

*Estimate

Philadelphia

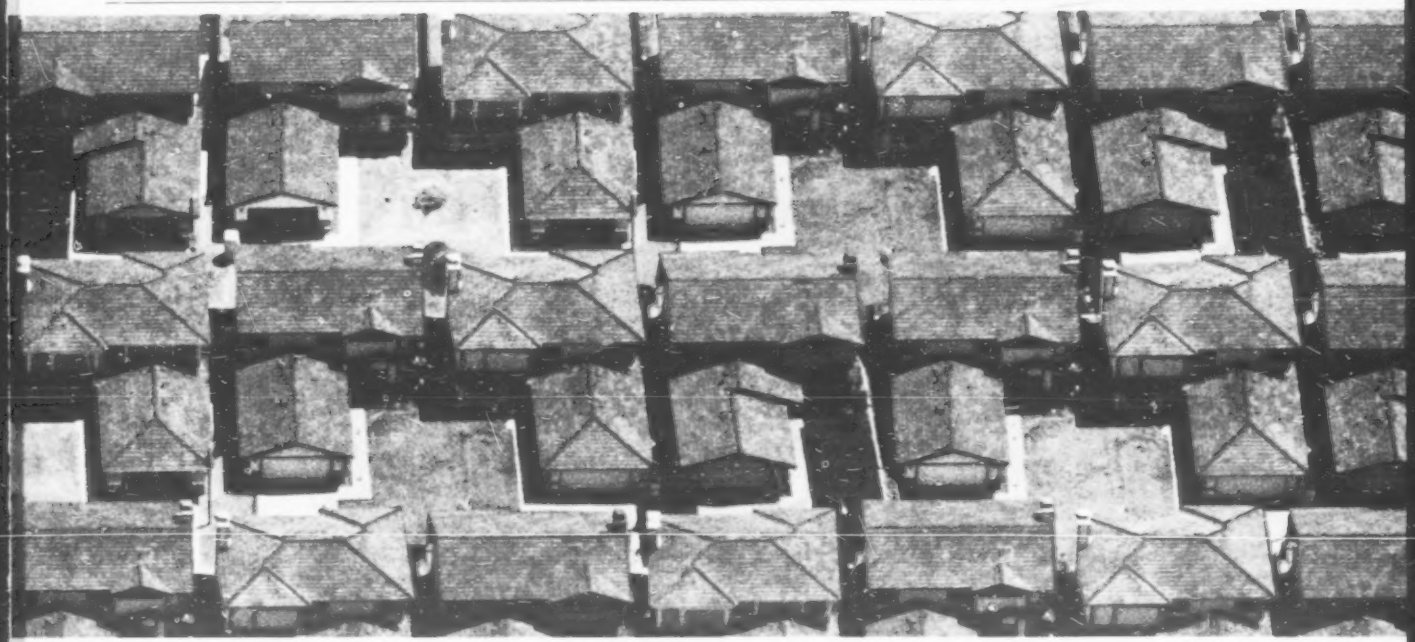
Prices of No. 1 Heavy Melt, Per Gross Ton

	1980	1981	1982	1983	1984	1985
Jan	$100.50	$95.75	$75.25	$57.50	$90.30	$79.00
Feb	108.00	91.50	75.50	62.50	91.00	81.00
Mar	101.50	91.50	72.90	63.50	85.75	82.25
Apr	92.75	90.00	71.50	65.00	84.50	76.90
May	82.50	84.50	65.00	65.70	82.00	70.00
June	76.10	79.50	60.30	68.50	80.50	67.00
July	83.00	75.50	59.50	68.50	80.50	70.30
Aug	88.25	79.30	59.50	68.50	81.00	72.50
Sept	91.40	76.50	59.50	69.50	81.50	69.90
Oct	91.50	69.50	57.00	71.50	80.10	68.25
Nov	91.50	66.50	54.70	78.00	79.75	67.50
Dec	96.50	66.50	54.50	85.00	79.90	68.50*
Average	90.00	81.05	63.76	68.64	82.40	72.76*

No. 2 Bundles

	1980	1981	1982	1983	1984	1985
Jan	$72.00	$64.00	$43.50	$40.50	$59.70	$49.50
Feb	76.25	66.75	43.50	45.00	64.00	51.25
Mar	71.50	60.50	43.50	46.50	62.25	51.50
Apr	64.75	60.50	43.50	45.50	59.10	47.70
May	53.25	57.50	40.50	43.70	56.50	43.00
June	51.50	54.50	40.50	43.00	50.50	41.50
July	56.00	54.50	39.50	41.25	49.50	49.30
Aug	63.00	54.30	39.50	40.50	50.50	45.50
Sept	65.50	51.50	39.50	40.50	50.50	43.50
Oct	64.50	46.00	39.50	43.70	48.90	43.50
Nov	68.50	39.50	39.50	44.50	47.00	45.00
Dec	69.50	37.50	39.80	55.00	46.50	46.50*
Average	63.93	53.41	40.80	44.55	53.83	46.07*

*Estimate



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NONFERROUS PRICES AND PRODUCTION

Aluminum Primary Ingot
Cents Per Pound, Freight Allowed

	1974	1975	1976	1977	1978	1979
Jan	29.00	39.00	41.00	48.00	53.00	55.25
Feb	29.00	39.00	41.00	48.00	53.00	58.00
Mar	29.24	39.00	41.00	48.00	53.00	58.00
Apr	31.50	39.00	41.75	51.00	53.00	59.50
May	31.50	39.00	44.00	51.00	55.25	59.50
June	33.40	39.00	44.00	51.00	55.25	59.50
July	33.50	39.00	44.00	53.00	55.25	62.75
Aug	35.94	41.00	47.00	53.00	55.25	62.75
Sept	38.70	41.00	48.00	53.00	55.25	62.75
Oct	39.00	41.00	48.00	53.00	55.25	66.25
Nov	39.00	41.00	48.00	53.00	55.25	66.25
Dec	39.00	41.00	48.00	53.00	55.25	66.25
Average	34.00	39.83	44.65	51.25	54.50	61.40

	1980	1981	1982	1983	1984	1985 *
Jan	66.25	76.00	76.00	76.00	81.00	48.86
Feb	66.25	76.00	76.00	76.00	81.00	49.89
Mar	66.25	76.00	76.00	76.00	81.00	49.52
Apr	72.00	76.00	76.00	76.00	81.00	50.28
May	72.00	78.00	76.00	76.00	81.00	50.23
June	72.00	78.00	76.00	76.00	81.00	46.86
July	72.00	78.00	76.00	76.00	81.00	45.78
Aug	72.00	78.00	76.00	76.00	81.00	46.30
Sept	72.00	78.00	76.00	76.00	81.00	44.75
Oct	76.00	78.00	76.00	81.00	81.00	44.07
Nov	76.00	78.00	76.00	81.00	81.00	43.16
Dec	76.00	78.00	76.00	81.00	81.00	45.10**
Average	71.56	77.33	76.00	77.25	81.00	47.07**

*Average London Metal Exchange spot price **Iron Age Estimates

Electrolytic Copper
Cents Per Pound

	1974	1975	1976	1977	1978	1979
Jan	68.70	70.50	63.00	65.20	62.75	56.63
Feb	68.70	63.00	63.00	67.50	62.25	89.36
Mar	63.70	63.00	64.50	70.63	61.62	97.75
Apr	68.70	63.00	68.00	74.00	64.00	90.50
May	81.20	63.00	70.00	72.80	64.33	89.50
June	86.10	62.25	70.00	69.88	65.23	86.39
July	86.30	61.50	74.00	68.75	63.50	85.95
Aug	86.70	63.00	74.00	64.00	66.47	90.24
Sept	83.00	63.00	74.00	60.00	66.83	92.36
Oct	78.25	63.00	72.00	60.00	69.54	97.72
Nov	75.80	63.00	65.00	60.00	71.20	98.49
Dec	73.00	63.00	65.00	61.29	71.50	106.10
Average	77.00	63.44	68.95	66.17	65.77	92.12

	1980	1981	1982	1983	1984	1985
Jan	116.95	88.55	79.54	79.00	68.00	66.25
Feb	134.17	86.01	79.41	82.75	70.00	68.50
Mar	105.97	86.74	76.34	81.13	74.25	67.25
Apr	94.57	88.15	76.87	82.40	76.50	72.25
May	92.91	85.99	78.86	82.81	71.50	71.75
June	92.32	85.11	71.67	80.88	69.25	69.00
July	102.86	83.98	71.64	81.75	66.50	68.50
Aug	101.29	88.32	71.82	79.75	66.50	68.25
Sept	98.78	84.90	71.87	76.75	65.50	67.75
Oct	98.91	83.03	71.94	71.50	64.00	68.50
Nov	96.02	81.93	72.25	68.64	67.50	67.25*
Dec	88.13	80.97	73.12	69.25	65.50	69.00*
Average	101.90	85.31	74.61	78.05	68.75	68.69*

*Iron Age Estimate

Zinc Prices
1974-81 Prime Western;
1982—High Grade
Cents Per Pound

	1974	1975	1976	1977	1978	1979
Jan	31.18	39.00	37.68	37.00	30.50	35.00
Feb	31.75	39.00	37.00	37.00	30.07	36.89
Mar	32.70	38.75	37.00	37.00	29.00	38.05
Apr	34.75	38.75	37.00	37.00	29.00	38.50
May	34.75	38.75	37.00	36.40	29.00	38.50
June	35.25	38.75	37.00	34.00	29.90	38.57
July	36.97	38.75	37.00	34.00	30.00	36.94
Aug	38.00	38.75	37.00	34.00	31.88	36.81
Sept	38.95	38.75	37.00	34.00	32.75	36.07
Oct	39.00	38.75	37.00	32.80	33.75	37.50
Nov	39.00	38.75	37.00	31.17	34.75	37.08
Dec	39.00	38.75	37.00	30.50	34.75	37.50
Average	35.94	38.79	37.06	34.57	31.28	37.51

	1980	1981	1982	1983	1984	1985 *
Jan	37.50	41.25	42.60	39.50	50.75	44.00
Feb	38.67	41.63	43.00	40.00	51.00	43.75
Mar	38.90	43.63	43.00	38.90	52.50	45.50
Apr	38.50	43.75	35.75	38.25	53.00	46.00
May	37.50	46.50	36.00	40.00	52.50	46.50
June	36.50	46.63	35.80	40.00	52.25	45.75
July	35.50	46.63	38.50	40.90	50.00	44.50
Aug	35.97	49.75	39.50	43.50	48.75	42.00
Sept	36.60	49.75	41.00	46.00	46.75	40.25
Oct	37.50	46.50	41.00	46.80	45.00	38.00
Nov	38.60	46.75	40.20	49.00	45.00	35.00*
Dec	40.50	43.75	38.25	49.00	45.00	35.00*
Average	37.70	45.54	39.55	42.65	49.38	42.19*

*Iron Age Estimate

Lead, Common Grade Price
Cents Per Pound

	1980	1981	1982	1983	1984	1985
Jan	51.29	34.13	29.95	22.40	26.50	20.50
Feb	50.00	30.68	28.00	21.95	26.00	19.75
Mar	49.55	35.28	26.00	21.75	26.50	19.75
Apr	45.45	37.63	25.50	22.00	27.00	19.50
May	36.00	37.00	26.50	21.55	26.50	20.50
June	34.25	36.25	25.80	21.20	25.00	20.00
July	35.77	41.25	27.90	21.15	32.25	19.75
Aug	40.97	44.63	27.90	21.15	30.00	19.50
Sept	42.40	42.50	26.75	22.00	25.25	19.50
Oct	45.00	37.63	26.00	25.50	24.00	19.00
Nov	44.00	34.46	23.75	26.00	26.50	18.50*
Dec	39.00	31.86	22.00	26.00	23.50	18.50*
Average	42.81	37.11	26.42	22.72	26.96	19.60*

*Iron Age Estimate

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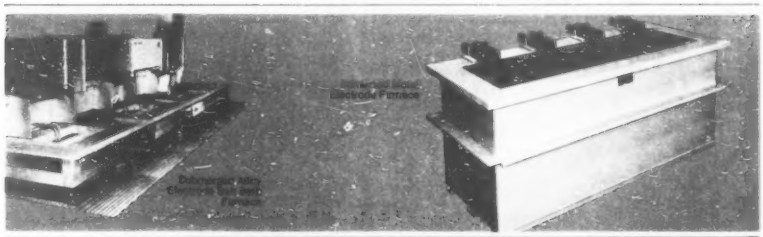

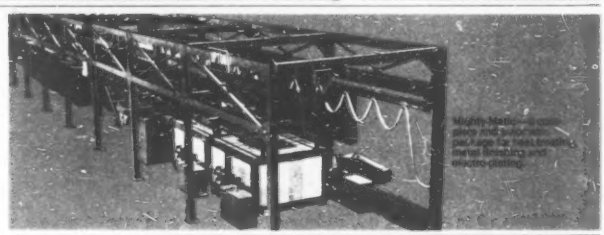

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Straits Tin, Spot Price
Cents Per Pound

	1980	1981	1982	1983	1984	1985
Jan.	758.95	643.35	696.66	578.82	565.09	533.33
Feb.	785.67	617.29	660.43	584.84	566.52	518.93
Mar.	812.18	607.75	589.40	598.42	576.75	515.11
Apr.	785.72	597.65	570.95	619.66	577.59	532.64
May	784.62	568.09	583.13	612.03	573.80	528.29
June	756.62	569.28	566.40	600.44	574.12	543.42
July	752.61	591.87	561.69	593.28	565.52	565.50
Aug.	751.51	652.76	564.08	583.50	567.17	566.07
Sept.	778.59	675.15	572.26	579.72	562.29	552.42
Oct.	744.38	698.17	556.11	580.58	550.60	553.46
Nov.	697.21	709.45	558.37	583.76	551.51	— *
Dec.	655.05	708.72	561.57	568.99	547.70	— *
Average	N.A.	636.63	586.75	590.34	564.89	— *

(U.S. cents per lb, EX-SMELTER, based on daily market in Kuala Lumpurn Malaysian dollars per kilo, beginning June, 1980. Prior prices are C.I.F., New York, based on Penang picul price.

N.A.—Not Applicable *Trading suspended October 25, 1985

Electrolytic Nickel
Cents Per Pound

	1980	1981	1982	1983	1984	1985
INCO*	325.00	310.00	271.00	225.00	237.00	241.50***
LME**	296.00	270.00	219.00	212.00	216.00	222.19***

*Inco, Ltd.'s average realized price for primary nickel (excluding intermediates)

**London Metal Exchange average spot price ***Iron Age Estimate

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Completely revised and up to date, this volume is a handy guide to the identification and selection of tooling materials: tool and die steels, sintered carbides, and ceramics. Characteristics of each material, cross indexes, and sources of supply — both manufacturers and distributors — are included. You'll also find the 1981 changes in the classification of tool steels made by the American Iron and Steel Institute. There is a Carbide Grade Chart which compares cemented carbide cutting materials.

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Please send _____ copies of the IRON AGE Tool Steel Directory, at $10.95 each. $ _____ enclosed. Make checks payable to IRON AGE. Mail to C. Wuttke, IRON AGE, Chilton Company, Chilton Way, Radnor, PA 19089.

NAME _____

COMPANY _____

STREET ADDRESS _____

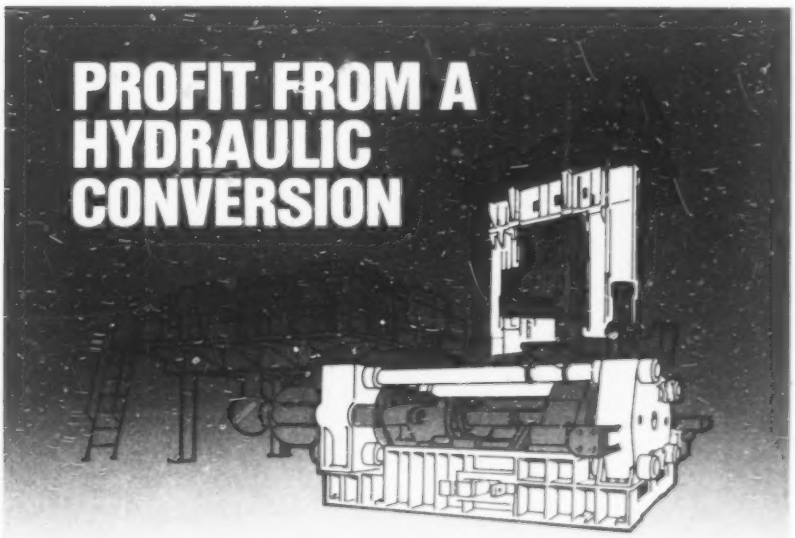
CITY, STATE, ZIP _____

U.S. Production of Primary Aluminum

Short tons

	1982	1983	1984	1985		1982	1983	1984	1985
Jan	350,548	279,299	377,409	362,166	July	296,986	312,991	384,912	321,909
Feb	310,405	245,601	357,391	318,145	Aug	287,077	327,051	378,747	318,718
Mar	336,276	273,086	385,496	344,223	Sep	271,147	329,625	362,805	309,012
Apr	318,619	270,450	382,946	325,298	Oct	275,277	352,733	373,009	312,272
May	320,897	291,751	402,479	334,872	Nov	266,366	349,945	358,659	304,000*
June	299,914	288,209	386,850	317,976	Dec	275,120	375,574	367,719	311,000*

Source: Aluminum Association *IA Estimate Total 3,608,632 3,696,315 4,518,422 3,879,591*



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Oilgear

19008A

U.S. Production of Slab Zinc

Short tons

	1981	1982	1983	1984	1985
Jan	33,445	26,706	20,010	25,526	30,861
Feb	31,457	23,845	22,766	24,346	28,457
Mar	34,450	23,639	24,994	23,865	33,238
Apr	34,051	21,314	24,709	28,421	28,210
May	32,218	23,656	25,858	27,252	26,854
June	30,828	23,713	23,990	30,072	21,288
July	33,018	20,570	17,645	26,961	23,632
Aug	33,534	22,433	25,601	26,033	26,892
Sept	29,424	26,549	25,064	25,400	27,377
Oct	29,778	27,348	26,532	25,410	30,669
Nov	29,276	20,608	27,275	25,175	27,138
Dec	25,301	19,945	24,086	31,212	28,200*
Total	376,780	280,326	288,530	319,673	332,816*
Average	31,398	23,361	24,041	26,639	27,735*

Source: ABMS *IA Estimate

U.S. Production of Refined Copper

Short tons

	1981	1982	1983	1984	1985
Jan	133,500	117,500	97,300	98,800	113,500
Feb	116,300	123,400	100,600	100,700	101,200
Mar	152,200	121,500	131,900	117,100	118,800
Apr	155,800	116,400	125,500	120,500	122,400
May	135,000	107,500	112,200	127,900	124,100
June	158,300	108,600	114,500	125,600	100,800
July	131,700	81,800	73,100	123,000	99,900
Aug	124,000	77,600	90,600	126,100	96,800
Sept	140,500	80,600	91,200	101,800	93,000
Oct	127,300	80,100	110,400	119,500	112,900
Nov	124,900	92,100	89,100	95,400	100,000*
Dec	147,900	90,800	100,200	101,400	106,000*
Total	1,647,400	1,197,900	1,236,600	1,257,800	1,289,400*
Avg	137,283	99,825	103,050	113,150	107,450*

Source: ABMS *IA Estimate

U.S. Production of Refined Lead

Short tons

	1981	1982	1983	1984	1985
Jan	57,984	50,527	57,029	51,497	41,143
Feb	53,569	45,193	50,943	51,374	50,255
Mar	58,170	43,994	52,825	43,046	56,287
Apr	52,741	36,111	49,938	39,983	52,701
May	35,038	54,323	47,230	39,231	53,446
June	24,378	52,974	42,045	26,161	50,876
July	33,027	44,224	39,525	28,401	32,455
Aug	45,097	46,362	45,283	29,064	46,613
Sept	43,704	49,201	41,226	25,287	44,869
Oct	46,082	50,574	49,972	40,764	39,289
Nov	39,412	50,546	50,886	27,979	32,478
Dec	44,036	48,585	46,331	26,451	33,000*
Total	533,238	572,614	572,283	429,238	533,412*
Average	44,437	47,718	47,668	35,770	44,451*

Source: ABMS *IA Estimate

PRICE & PRODUCTION DATA

(Effective December 16,1985)

Steel production by districts, thousands of tons (000 omitted)

	Last Week	Two Weeks Ago	Month Ago	Year Ago
Northeast Coast	168	175	163	134
Pittsburgh	222	217	178	179
Youngstown	97	93	100	90
Lake Erie	123	119	124	111
Detroit	134	141	157	143
Chicago	386	441	478	399
Cincinnati	82	78	80	87
St. Louis	77	79	80	72
Southern	199	207	202	166
Western	71	83	83	64
U.S. Production	1,557	1,633	1,645	1,445

Source: American Iron & Steel Institute

Lake Superior Ore Prices

51.50% Fe Natural delivered lower lake ports unless otherwise stated. Rail transportation, handling and unloading may be charged to buyer. Citanic ore 80¢ premium.

Pellets (per iron unit natural)	gross-ton 58.0*
Pellets (per iron unit natural)	gross-ton 59.4**
Pellets (per iron unit natural)	gross-ton 72.5-86.9***
Mesabi, regular-unscreened	gross-ton $32.53
Mesabi, non-bessemer	gross-ton $30.03-31.53

*38.0¢ - Mineral Services, Inc., as of 6-13-85. **39.4¢ - Rio Algom, Mpls., 6-7-85, delivered fob of vessel, upper Lake ports. ***72.5¢ to 0.5 "Iron" as of 6-16-85. 86.9¢ - Oglebay Norton, 3-25-82; Hanna Mining and Cleveland Cliffs, 2-26-82.

STEEL PRODUCTION, COMPOSITE PRICES

(Effective December 16,1985)

U.S. Steel Production	Last Week	Two Weeks Ago	To Date 1985	To Date 1984
Net tons, in thousands	1,557	1,633	83,726	87,315
Capability Utilization Rate	61.2	64.2	65.7	66.7

Composite Prices	This Week	Week Ago	Month Ago	Year Ago
Finished Steel Base* (¢/lb.—eff. 7/1/84)	27.582	27.582	27.582	27.582
Pig Iron** (Net ton = 2000 lbs.)	$213.00	$213.00	$213.00	$213.00
Scrap No. 1 hvy.*** (Gross ton = 2240 lbs.)	$ 70.17	$ 69.50	$ 68.83	$ 78.50
No. 2 bundles	$ 50.50	$ 50.50	$ 50.83	$ 51.50

Scrap Comparison (Gross Ton)

No. 1 steel, Pittsburgh	$ 71.50	$ 69.50	$ 69.50	$ 79.50
No. 1 steel, Philadelphia	69.50	69.50	67.50	75.50
No. 1 steel, Chicago	69.50	69.50	69.50	80.50
No. 1 bundles, Detroit	64.50	64.50	56.50	61.50
Low Phos., Youngstown	69.50	69.50	66.50	72.50
No. 1 mach'y cast., Pgh	68.50	68.50	68.50	66.50
No. 1 mach'y cast., Phila	91.50	91.50	91.50	98.50
No. 1 mach'y cast., Chi	97.50	97.50	97.50	110.50

*Finished Steel Composite. Weighted index of sheet, bars, shapes, plates, wide flange beam, hot-rolled strip, cold-rolled sheets and strips.

**Pig Iron Composite. Based on average prices for basic and foundry iron at key producing centers/marketing points within the U.S.

***Iron Scrap Composite. Averages of No. 1 hvy. melting steel scrap and No. 1 bundles delivered to consumers at Pittsburgh, Philadelphia and Chicago.

NONFERROUS PRICES

(Effective December 16,1985) Prices obtained or made based on representative tonnages per gross ton delivered to consumer unless otherwise stated.

Primary Metal Prices

(cents per lb.)	current price	ago price	date of change
Aluminum (LME)	46.89	44.51	12/16/85
Copper (C)	67.50-69.00	67.00-69.00	12/16/85
Lead	18.50-19.20	18.25-19.50	12/16/85
Magnesium ingot	153.00	148.00	12/9/85
Nickel (LME)	183.92	181.37	12/16/85
Zinc	35.00	38.00	11/6/85

ALUMINUM: Avg. primary wire & primary ingot. COPPER (C): common grade. LEAD: common grade. MAGNESIUM: 99.8% ingot, delivered. NICKEL: Avg. primary wire & primary ingot. ZINC: high grade.

Antimony, American Laredo, Texas	$2.00
Beryllium-aluminum 5% Be, per lb. contained Be	$236.00
Beryllium-copper, per lb. cont. Be	$144.00
Beryllium 97% powder 200	$197.00
Cadmium, ton lots	$1.25-1.50
Calcium, ton lots, crown	$3.92
Chromium, 99.5% electro	$4.62
Cobalt, 99%, cathode	$11.70
Gold per troy oz.	$318.60
Iridium, dollars per troy oz.	$2.50
Iridium, dollars per troy oz.	$430.00
Magnesium sticks, 10,000 lbs.	$2.02
Mercury, per 76-lb. f.o.b. N.Y.	$320.00-330.00
Molybdenum, lb. tech. moly oxides, 20 lb. MO can	$3.00-3.13
Nickel electro (PDCR)	$3.29
Palladium, per troy oz.	$94.50
Platinum, per troy oz.	$327.00
Rhodium, per troy oz.	$1,125.00
Silver ingots, per troy oz.	$5.85
Titanium sponge, mett grade	$3.40-3.55
Tungsten powder, fyd red	$9.00-9.50
Vanadium	$6.00
Zirconium sponge	$12.00-17.00

(Per lb. unless otherwise noted)

Straits Tin Price

U.S. cents per lb. EX SMELTER, based on daily market in Kuala Lumpur in Malaysian dollars per kilo.

Dec. 9—TRADING
Dec. 10—SUSPENDE
Dec. 11—
Dec. 12—
Dec. 13—

Scrap Prices
Brass Mill Scrap

(Cents per lb. over 20,000 lbs. add ½¢ per lb.)

	Solids	Turnings
Copper	59	52
Yellow brass	50½	41¼
Red brass	54½	48½
Comm. bronze	56	49½
Mang. bronze	43	42
Free cutting rod ends	47	46

Custom Smelters Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	58
No. 2 copper wire	50
Light copper	41

Ingot Makers Scrap

(Cents per lb., carload lots, del. refinery)

No. 1 copper wire	54
No. 2 copper wire	46
Light copper	37
No. 1 composition	47
No. 1 comp. turnings	46
Hvy. yellow brass solids	31
Hvy. yellow brass turnings	28
Radiators	36

Aluminum

New mixed clips	31	— 32
Old sheet	29	— 30
Old cast	29	— 30
Clean dry borings	30	— 31

Dealers' Scrap

(Dealers' buying price f.o.b. New York in cents per pound)

Aluminum

Segregated clippings	24	— 26
Mixed I.C. clips	21	— 22
Old sheets and cast	20	— 21
[illegible] and turnings	16	— 18
[illegible]inum clippings	24	— 25

Copper and Brass

No. 1 copper wire	45	— 46
No. 2 copper wire	37	— 39
Light copper	32	— 33
Radiators	30	— 31
No. 1 composition	39	— 40
No. 1 composition turnings	36	— 37
Cocks and faucets	28	— 29
Clean heavy yellow brass	27	— 28
Brass Pipe	28	— 29
New soft brass clippings	39	— 40

Lead

Heavy soft lead	5	— 7
Whole batteries	1	— 3
Type metal	14	— 15
Electrotype	13	— 15

Nickel

Nickel solids	110	—120
Nickel rod ends	110	—120
Nickel sheets, clips	110	—120
Nickel turnings	25	— 35

Zinc

New zinc clippings	15	— 17
Old diecast zinc	11	— 13

St. Louis price reporting change

Effective Jan. 6, *Iron Age* will revise scrap prices reported for the **St. Louis** market to align its prices with those paid by the consumers in that region. For some of the grades in that market, the actual market prices may not change as much as the *Iron Age* prices will.

For additional information, contact Michael Marley, Managing Editor, Iron Age, Chilton Co., Chilton Way, Radnor, Pa. 19089.

EFFECTIVE DECEMBER 16,1985

(Effective December 16,1985) Prices obtained in trade based on representative tonnages per gross ton delivered to consumer unless otherwise stated. Prices are the opinions of Iron Age editors and correspondents, based on contacts with dealers, brokers, generators and users in the industry on the effective date listed above.

Ferrous Scrap Prices

Pittsburgh

No. 1 hvy. melting	$ 71.00 to	$ 72.00
No. 2 hvy. melting	61.00 to	62.00
No. 1 dealer bundles	88.00 to	89.00
No. 1 factory bundles (auto)	88.00 to	89.00
No. 2 bundles	49.00 to	50.00
No. 1 busheling	83.00 to	84.00
Machine shop turnings	7.00 to	8.00
Shoveling turnings	40.00 to	41.00
Cast iron borings	38.00 to	39.00
Low phos. punchings plate	90.00 to	91.00
Heavy turnings	63.00 to	64.00
No. 1 RR hvy. melting	78.00 to	79.00
Rails, 2 ft. and under	97.00 to	98.00
Scrap rails, random lgth	72.00 to	73.00
RR specialties	93.00 to	94.00
No. 1 machinery cast	68.00 to	69.00
Cupola cast	61.00 to	62.00
Heavy breakable cast	30.00 to	31.00
Stainless		
18-8 bundles and solids	515.00 to	525.00
18-8 turnings	415.00 to	425.00

Chicago

No. 1 hvy. melting	$ 69.00 to	$ 70.00
No. 2 hvy. melting	62.00 to	63.00
No. 1 dealer bundles	85.00 to	86.00
No. 1 factory bundles (auto)	85.00 to	86.00
No. 2 dealer bundles	56.00 to	57.00
No. 1 busheling	82.00 to	83.00
Shredder scrap	81.00 to	82.00
Machine shop turnings	38.00 to	39.00
Mixed borings and turnings	40.00 to	41.00
Shoveling turnings	42.00 to	43.00
Cast iron borings	42.00 to	43.00
Low phos. forge crop	93.00 to	94.00
Low phos. punchings plate 1/4 in. and heavier	109.00 to	110.00
Low phos. 2 ft. and under	104.00 to	105.00
No. 1 RR hvy. melting	73.00 to	74.00
Scrap rails random lgth	79.00 to	80.00
Reroller rails	102.00 to	103.00
Rails, 2 ft. and under	100.00 to	101.00
RR couplers and knuckles	87.00 to	88.00
RR car axles	100.00 to	101.00
No. 1 machinery cast	97.00 to	98.00
Cupola cast	83.00 to	84.00
Stove plate	87.00 to	88.00
Steel car wheels	87.00 to	88.00
Stainless		
18-8 bundles and solids	500.00 to	510.00
18-8 turnings	415.00 to	425.00
430 bundles and solids	130.00 to	135.00
430 turnings	95.00 to	100.00

Philadelphia

No. 1 hvy. melting	$ 68.00 to	$ 71.00
No. 2 hvy. melting	60.00 to	63.00
No. 1 dealer bundles	51.00 to	54.00
No. 2 dealer bundles	44.00 to	47.00
No. 1 busheling	80.00 to	83.00
Shredder scrap	80.00 to	83.00
Machine shop turnings	24.00 to	27.00
Mixed borings and turnings	24.00 to	27.00
Shoveling turnings	39.00 to	42.00
Low phos. 3 ft. and under	73.00 to	76.00
Low phos. 2 ft. punchings	94.00 to	97.00
Electric furnace bundles	82.00 to	85.00
RR specialties	73.00 to	76.00
Rails, 2 ft. and under	98.00 to	101.00
Cupola cast	76.00 to	79.00
Heavy breakable cast	53.00 to	56.00
No. 1 machinery cast	90.00 to	93.00

Detroit

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 30.00 to	$ 31.00
No. 2 hvy. melting	49.00 to	50.00
No. 1 dealer bundles	64.00 to	65.00
No. 2 bundles	25.00 to	26.00
No. 1 busheling	63.00 to	64.00
Drop forge flashings	40.00 to	41.00
Machine shop turnings	31.00 to	32.00
Mixed borings and turnings	12.00 to	13.00
Shoveling turnings	31.00 to	32.00
Cast iron borings	17.00 to	18.00
Heavy breakable cast	33.00 to	34.00
Mixed cupola cast	48.00 to	49.00
Automobile cast	71.00 to	72.00
Stainless		
18-8 bundles and solids	460.00 to	470.00
18-8 turnings	345.00 to	355.00
430 bundles and solids	115.00 to	125.00

Youngstown

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 60.00 to	$ 61.00
No. 2 hvy. melting	53.00 to	54.00
No. 1 dealer bundles	72.00 to	73.00
No. 2 dealer bundles	36.00 to	37.00
Machine shop turnings	20.00 to	21.00
Shoveling turnings	20.00 to	21.00
Low phos. plate	69.00 to	70.00
Electric furnace bundles	61.00 to	62.00
Galvanized bundles	59.00 to	60.00

Cleveland

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 36.00 to	$ 37.00
No. 2 hvy. melting	54.00 to	55.00
No. 1 dealer bundles	76.00 to	77.00
No. 1 factory bundles	56.00 to	57.00
No. 2 bundles	30.00 to	31.00
No. 1 busheling	65.00 to	66.00
Machine shop turnings	22.00 to	23.00
Shoveling turnings	22.00 to	23.00
Cast iron borings	15.00 to	16.00
Cut structural & plates 5 ft. and under	63.00 to	64.00
Cut structural & plates 2 ft. and under	64.00 to	65.00
Low phos. punchings plate	64.00 to	65.00
Foundry steel, 2 ft. & under	51.00 to	52.00
No. 1 RR hvy. melting	37.00 to	38.00
Rails, 2 ft. and under	66.00 to	67.00
Rails, 18 in. and under	68.00 to	69.00
No. 1 machinery cast	73.00 to	74.00
Mixed cast	42.00 to	43.00
Stainless		
18-8 bundles	445.00 to	455.00
18-8 turnings	330.00 to	340.00
430 bundles	100.00 to	110.00

Buffalo

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 50.00 to	$ 51.00
No. 2 hvy. melting	40.00 to	41.00
No. 1 busheling	65.00 to	66.00
No. 1 dealer bundles	64.00 to	65.00
No. 2 bundles	29.00 to	30.00
Machine shop turnings	15.00 to	16.00
Mixed boring and turnings	15.00 to	16.00
Shoveling turnings	21.00 to	22.00
Cast iron borings	23.00 to	24.00
Low phos. plate	73.00 to	74.00
Structural and plate 2 ft. and under	77.00 to	78.00
Rails, 2 ft. and under	79.00 to	80.00
Scrap rails, random lgth	64.00 to	65.00
No. 1 machinery cast	77.00 to	78.00
No. 1 cupola cast	59.00 to	60.00

St. Louis

No. 1 hvy. melting	$ 44.00 to	$ 45.00
No. 2 hvy. melting	33.00 to	34.00
Foundry steel, 2 ft.	38.00 to	39.00
No. 1 dealer bundles	44.00 to	45.00
No. 2 bundles	29.00 to	30.00
Machine shop turnings	15.00 to	16.00
Shoveling turnings	21.00 to	22.00
Cast iron borings	30.00 to	31.00
No. 1 RR hvy. melting	33.00 to	34.00
Rails, random length	59.00 to	60.00
Rails, 18 in. and under	72.00 to	73.00
RR specialties	70.00 to	71.00
Cupola cast	71.00 to	72.00
Heavy breakable cast	49.00 to	50.00
Stove plate	69.00 to	70.00
Steel car wheels	81.00 to	82.00
Rerolling rails	99.00 to	100.00
Unstripped motor blocks	64.00 to	65.00

Birmingham

No. 1 hvy. melting	$ 68.00 to	$ 69.00
No. 2 hvy. melting	64.00 to	65.00
No. 1 dealer bundles	68.00 to	69.00
No. 2 bundles	45.00 to	46.00
No. 1 busheling	68.00 to	69.00
Shredder scrap	84.00 to	85.00
Machine shop turnings	24.00 to	25.00
Shoveling turnings	38.00 to	39.00
Cast iron borings	37.00 to	38.00
Electric furnace bundles	64.00 to	65.00
Elec. furnace, 3 ft. & under	64.00 to	65.00
Structural and plate, 2 ft.	86.00 to	87.00
Structural and plate, 4 ft.	81.00 to	82.00
No. 1 RR hvy. melting	81.00 to	82.00
Scrap rails, random lgth	69.00 to	70.00
Rails, 2 ft. and under	85.00 to	86.00
Angles and splice bars	81.00 to	82.00
No. 1 cupola cast	84.00 to	85.00
Unstripped motor blocks	74.00 to	75.00

Cincinnati

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 34.00 to	$ 35.00
No. 2 hvy. melting	53.00 to	54.00
No. 1 dealer bundles	64.00 to	65.00
No. 2 bundles	34.00 to	35.00
Machine shop turnings	7.00 to	8.00
Shoveling turnings	16.00 to	17.00
Cast iron borings	15.00 to	16.00
Low phos. 18 in. and under	79.00 to	80.00
Rails, random length	59.00 to	60.00
Rails, 2 ft. and under	74.00 to	75.00
No. 1 cupola cast	59.00 to	60.00
Heavy breakable cast	24.00 to	25.00
Drop broken cast	71.00 to	72.00

New York

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 44.00 to	$ 45.00
No. 2 hvy. melting	33.00 to	34.00
No. 2 dealer bundles	20.00 to	24.00
Mixed borings and turnings	10.00 to	11.00
Machine shop turnings	4.00 to	5.00
Shoveling turnings	10.00 to	12.00
Clean cast chem. borings	35.00 to	36.00
No. 1 machinery cast	74.00 to	80.00
Mixed yard cast	30.00 to	31.00
Heavy breakable cast	10.00 to	12.00
Stainless		
18-8 prepared solids	445.00 to	465.00
18-8 turnings	340.00 to	360.00
430 prepared solids	90.00 to	100.00
410 solids	75.00 to	85.00

Boston

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 41.00 to	$ 42.00
No. 2 hvy. melting	41.00 to	42.00
No. 1 dealer bundles	53.00 to	55.00
No. 2 bundles	34.00 to	36.00
No. 1 busheling	59.00 to	61.00
Shredder scrap	61.00 to	63.00
Machine shop turnings	12.00 to	14.00
Shoveling turnings	18.00 to	20.00
No. 1 machinery cast	70.00 to	80.00
Mixed cupola cast	84.00 to	89.00
Heavy breakable cast	8.00 to	10.00

San Francisco

No. 1 hvy. melting	$ 38.00 to	$ 40.00
No. 2 hvy. melting	32.00 to	34.00
No. 1 dealer bundles	29.00 to	31.00
No. 2 dealer bundles	17.00 to	19.00
Machine shop turnings	8.00 to	9.00
Cast iron borings	8.00 to	9.00
No. 1 cupola cast	80.00 to	82.00

Los Angeles

No. 1 hvy. melting	$ 38.00 to	$ 40.00
No. 2 hvy. melting	32.00 to	34.00
No. 1 dealer bundles	29.00 to	31.00
No. 2 dealer bundles	18.00 to	19.00
Machine shop turnings	11.00 to	12.00
Shoveling turnings	10.00 to	11.00
Cast iron borings	9.00 to	9.00
Elec. furnace, 1 ft. and under (foundry)	70.00 to	72.00
No. 1 cupola cast	72.00 to	74.00

Seattle

No. 1 hvy. melting	40.00 to	42.00
No. 2 hvy. melting	51.00 to	53.00
No. 1 bundles	35.00 to	37.00
No. 1 cupola cast	89.00 to	90.00
Mixed yard cast	90.00 to	92.00

Hamilton, Ont.

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 81.00
No. 2 hvy. melting, cut 2 ft. and under	70.00
No. 1 dealer bundles	86.00
No. 2 bundles	61.00
Mixed steel scrap	59.00
Bush. new tech. grade'd	81.00
Bush. new tech. ungrade'd	64.00
Machine shop turnings	34.00
Short steel turnings	34.00
Mixed borings and turnings	19.00
Cast scrap	89.00

Houston

Brokers buying prices per gross ton on cars

No. 1 hvy. melting	$ 47.00 to	$ 48.00
No. 2 hvy. melting	34.00 to	35.00
No. 2 bundles	40.00 to	41.00
Machine shop turnings	11.00 to	12.00
Crushed turnings	30.00 to	31.00
Shredder scrap	74.00 to	75.00
Cut structural plate, 2 ft. and under	47.00 to	48.00
Cut structural plate, 3 ft. and under	79.00 to	80.00
Unstripped motor blocks	57.00 to	58.00
Cupola cast	83.00 to	84.00

PRODUCER KEY
With Principal Offices

A7 Armco Inc., Middletown, Ohio
A8 Atlantic Steel Co., Atlanta, Ga.
A11 Atlantic Wire Co., Branford, Conn.

B1 Baron Drawn Steel Corp., Toledo, Ohio
B3 Bethlehem Steel Corp., Bethlehem, Pa.
B4 Blair Strip Steel Co., New Castle, Pa.
B5 Bliss & Laughlin Steel Co., Harvey, Ill.

C6 CF&I Steel Corp., Pueblo, Colo.
C10 Copperweld Steel Co., Warren, Ohio
C16 Connors Steel Co., Birmingham, Ala.
C20 Calumet Steel Div., Chicago Heights, Ill.

D1 Detroit Strip Div., Cyclops Corp.

E4 Elliot Bros. Steel Co., New Castle, Pa.

F1 Fort Sterling, Inc., McKeesport, Pa.

G2 Granite City Steel Div., National Steel Corp., Granite City, Ill.
G3 Great Lakes Steel Div., National Steel Corp., Ecorse, Mich.
G4 Green Steel Co., Dover, Ohio
G5 Green River Steel Corp., Owensboro, Ky.
G6 Gibraltar Steel Corp., Buffalo, N. Y.
G7 Georgetown Steel Corp., Georgetown, S.C.

H1 Hercules Drawn Steel Corp., Livonia, Mich.

I2 Ingersoll Steel Div., Newcastle, Ind.
I3 Inland Steel Co., Chicago
I4 Interlake Steel Corp., Chicago

J2 Jessop Steel Corp., Washington, Pa.
J3 Jones & Laughlin Steel Corp., Pittsburgh
J4 Joslyn Mfg. & Supply Co., Chicago
J5 Judson Steel Corp., Emeryville, Calif.

K2 Keystone Consolidated Industries, Inc.
K3 Kentucky Electric Steel Co., Ashland, Ky.
K5 Kemco Div., Foote Mineral Co., Keokuk, Ia.

L2 La Salle Steel Co., Chicago
L3 Lone Star Steel Co., Dallas
L4 Lukens, Inc., Coatesville, Pa.

M2 McLouth Steel Products Corp., Detroit
M6 Mill Strip Products Div., National Steel Service Center, National Steel Corp.
M9 Molnup Steel Products Co., Beaver Falls, Pa.
M11 Midwest Steel Div., National Steel Corp., Portage, Ind.

N1 Northeast Precision Steel Co., Boston
N4 Northwestern Steel & Wire Co., Sterling, Ill.
N6 Northwest Steel Rolling Mills, Seattle
N9 Nelsen Steel & Wire Co., Chicago
N10 North Star Steel Co., Saint Paul, Minn.

O2 Oregon Steel Mills, Portland, Ore.

P2 Phoenix Steel Corp., Claymont, Del.
P15 Philadelphia Steel and Wire Corp., Phila.

R3 Republic Steel Corp., Cleveland
R4 Ramco Steel Co., Buffalo, N. Y.
R5 Robin Steel Corp., North Tonawanda, N.Y.
R7 Rome Strip Steel Co., Rome, N. Y.

S1 Sharon Steel Corp., Sharon, Pa.
S7 Stanley Works, New Britain, Conn.
S8 Superior Drawn Steel Co., Monaca, Pa.
S10 Seneca Steel Corp., Buffalo, N. Y.
S16 Southern Precision Steel Co., Gulfport, Miss.

T4 Thomas Steel Strip Co., Warren, Ohio
T5 Timken Co., Steel Division, Canton, Ohio
T7 Texas Steel Co., Fort Worth, Tex.
T9 Trumph Electro Corp., Chicago
T10 Tennessee Forging Steel Corp., Harriman, Tenn.
T11 Teledyne Columbia-Summerill, Carnegie, Pa.

U United States Steel Corp., Pittsburgh

W3 Weirton Steel Corp., Weirton, W. Va.
W5 Wheeling-Pittsburgh Steel Corp.
W7 Wilson Steel & Wire Co., Chicago
W10 Wyckoff Steel Div., Armco-Pittsburgh Corp., Pittsburgh
W14 Whitmor Steel Strip Div., Whitmor Industries, Ltd., Detroit

STEEL SERVICE CENTER PRICES

Price, Dollars per 100 lb

Cities*	Sheets			Strip	Plates	Shapes	Bars		Alloy Bars			
Atlanta	24.16	30.15	33.60	26.66	24.85	23.22	21.05	26.73	35.62	44.95	57.90	66.57
Baltimore	24.11	29.97	34.02	31.14	30.35	26.49	23.78	33.08	46.64	50.79	57.10	65.47
Birmingham	22.79	27.62	33.60	26.44	23.68	23.33	22.35	29.12	43.72	49.65	58.62	66.75
Boston	30.96	37.08	43.12	41.54	31.23	29.70	25.01	32.57	38.73	40.46	49.57	54.66
Buffalo	27.96	33.52	39.73	34.24	26.37	25.64	21.26	30.07	37.80	38.46	44.68	52.51
Chicago	25.81	32.81	36.03	24.23	21.92	20.89	19.30	24.99	29.30	36.30	44.26	48.92
Cincinnati	26.69	32.94	35.92	24.95	24.66	19.86	18.68	26.34	31.24	37.41	42.52	48.90
Cleveland	25.57	32.17	35.64	27.60	24.19	22.15	19.05	25.25	34.10	37.45	42.76	50.25
Denver	28.28	35.17	34.44	31.39	26.86	24.20	21.49	34.15	44.04	51.41	57.29	63.86
Detroit	26.43	33.16	36.33	24.16	24.66	20.60	19.06	26.32	31.14	37.08	42.57	49.48
Houston	24.82	27.06	30.33	33.41	24.72	24.21	22.05	36.65	42.12	41.99	53.65	60.00
Kansas City	27.62	34.67	36.90	26.86	25.35	21.25	18.40	30.97	36.41	39.84	44.87	50.82
Los Angeles	24.23	29.24	35.08	28.90	26.27	32.05	27.09	34.71	46.00	51.04	57.30	65.41
Memphis	21.73	30.60	31.64	26.90	24.43	24.15	21.68	30.50	33.71	44.20	54.48	63.87
Milwaukee	26.03	32.57	35.82	26.25	24.99	21.29	19.27	25.16	32.23	36.77	41.78	48.91
New York	29.19	36.09	40.14	36.36	30.67	25.04	22.47	33.05	36.74	41.43	44.90	51.13
Philadelphia	25.17	32.64	38.45	36.00	27.96	26.10	22.25	29.00	37.35	42.07	49.95	56.28
Pittsburgh	24.95	36.19	42.78	34.22	33.37	27.78	25.62	27.40	35.31	39.15	44.84	50.07
Portland	25.98	29.47	36.46	31.41	32.56	34.45	27.54	37.58	46.18	51.65	63.57	
San Francisco	24.13	29.74	35.87	29.06	25.69	29.86	27.16	35.30	47.99	51.54	57.35	65.41
Seattle	27.37	28.24	35.47	27.92	21.37	27.40	27.15	35.25	43.61	52.31	63.62	65.16
Spokane	20.41	28.65	28.65	32.28	32.02	33.63	23.45	36.94	39.45	42.17	----	54.16
St. Louis	26.11	29.84	29.84	26.73	23.57	19.95	19.63	29.16	34.95	36.09	43.11	49.76
St. Paul	25.90	31.58	31.58	30.63	23.67	26.52	19.13	28.60	34.40	37.29	42.36	49.30

*Prices at all points include transportation delivery charges.

Codes identify Producers listed on p. 77. (Prices quoted are mill base prices in cents per pound unless otherwise noted and do not reflect extras or surcharges.)
N.A.—Not available.

Billets, Blooms, Slabs

(Dollars per net ton)

Carbon Reroiling, Midwest
W5 $366.00
N4 $366.00
West
C6 $346.00
Carbon Forging, East
B3,Z $473.00
C10, U1 $473.00
R3 $453.00
Midwest
R3, W5 $453.00
U1 $473.00
S1, J3 $473.00
C10 $473.00
K2 $473.00
West
C6 $420.00
Alloy, East
R3 $492.00
B3 $512.00
U1, C10 $512.00
Midwest
W5 $492.00
U1, J3 $512.00
C10 $512.00
R3 $492.00
S1 $512.00
West
C6 $469.00

Structurals

Carbon, East
B3 22.90
J3 23.90
Midwest
C20 22.90
W8 22.90
J3 23.90
T10 23.90
N4 23.90
South
C16 23.90
T10 22.90
High Strength, Low Alloy
East
B3 22.90
J3 23.90
Midwest
N4 23.90
W8 24.15
J3 23.90
South
C16 23.90
Wide Flange, Carbon, East
B3 22.90
U1 23.75
J3 23.90
Midwest
U1 22.75
N4 23.90
J3 23.90
Wide Flange
High Strength Low Alloy
East
U1 24.30
Midwest
U1 24.30

Strip

Hot Rolled, Carbon, Cut to Edge—all widths, East
U1, B3 23.75
J3 22.05
Midwest
D1 22.05
I4 22.85
J3, W2 22.05
G2, G3 23.45
N4 22.55
W5, S1 23.75
U1, A7 23.75
J3, B3 23.75
M2 22.05
R3 22.05
South
R3 22.05
Cold Rolled, Carbon Max. 25% East
E4 29.75
S10 29.60
P15 28.80
B4 36.60
G6 36.175
Midwest
I4 39.30
W14 32.80
J4 34.05
S1 37.05
High Strength, Hot Rolled
Low Alloy, Cut Edge & Mill Edge
All widths (plus extras)*
Midwest
M2, R3 22.05
W3, J3 22.05
G2, G3 23.45
S1 23.75
A7 25.35
South
R3 22.05
High Strength, Cold Rolled
Low Alloy, Mill Edge
Midwest
S1 37.05
Alloy, Hot Rolled
Midwest (plus extras)*
S1 26.10
I4 25.20
Alloy, Cold Rolled
East (plus extras)*
E4,M6 43.35
B4 49.75
P15 30.10
Midwest
I4 44.30
S1 44.80

Sheets

Hot Rolled, Carbon (18 Ga & Heavy)
East
B3 23.75
J3 22.05
U1 23.75
Midwest
M2, R3, W3 22.05
D1, J3 22.05
G2, G3 23.45
I4 22.45
U1, W5 23.75
S1, B3 23.75
J3, A7 23.75
West
U1 24.25
South
R3 22.05
Cold Rolled, East (Gen'l)
B3,Z 28.15
J1 28.15
U1 28.15
Midwest
R3, M2, W3 26.15
G2, G3, M11 27.85
J3 26.15
D1 26.15
U1, W5 28.15
S1, B3 28.15
J3, A7 28.15
West
U1 28.65
South
R3 24.65
Galvanized (Hot dipped), East
B3,Z 30.30
U1 30.30
Midwest
J3, D1, W3 28.00
R3, Y1 28.00
G2, M11 30.00
U1, W5 30.30
S1 30.30
J3 30.30
A7 30.30
West
U1 30.80
South
R3 28.00
Enameling, Midwest
U1, S1 29.65
I5, A7 29.65
J3 27.65
Long Terne, Midwest
W5, A7, U1 31.65
R1 29.35

Wire Rod

East
R3,Z1 22.35
Midwest
N4, K2 22.35
U1 24.10
A7 22.00
West
C6 21.45
South
G7 22.35

Tinplate

Electrolytic Tinplate
Single Reduced (70 lb)
East per base box
J3 26.29
U1 30.12
Midwest
U1 30.12
J3 26.29
M11 27.54
W3 26.29
W5 28.99
West
U1 30.62
South
U1 30.12
Double Reduced (55 lb)**
Midwest
M11 21.95
J3 21.49
U1 24.33
W3 21.49
W5 23.38
West
U1 24.83
South
U1 24.33
Black Plate
Single Reduced (70 lb)*
East
B3 24.81
Midwest
J3, W3 24.01
U1 24.57
W5 25.55
U1 26.55
M11 26.27
West
U1 26.55
Double Reduced (55 lb)
East
B3 20.49
Midwest
U1 21.32
M11, W5 20.49
W2, J3 18.93
West
U1 21.32
South
U1 21.32
*75 lb—base weight extra 69¢
**50 lb—base weight extra $1.40

Bars

Carbon Steel, Hot Rolled
(Special quality)
East
R3, K3, R5 25.80
J3 25.80
U1 27.05
C10 27.05
B3 27.05
Midwest
I4 26.00
U1, J3 27.05
R3, T10 25.80
C20, N4 25.80
K2 25.80
A7 20.25
West
C6 24.45
South
A8 20.65
C16 25.80
Cold Finished Carbon, East
A11 22.15
R3 33.75
T11, S8 31.00
J3/4, L2 31.00
M8, W10 31.00
N1 24.475
R4, B4 33.25
C10 31.00
Midwest
W10, R3 33.25
J3 31.00
B1 33.45
L2 30.75
N9 31.00
W14 22.20
B5, M9 34.75
West
R3 37.15
South
J3 34.00
C16 24.40
J3 31.95
Alloy, Hot Rolled, East
R5, K3 27.95
R3, J3 27.95
U1 29.20
B3 29.20
C10 29.20
Midwest
R3 27.95
J3, C10, U1 29.20
I4 27.35
A7 20.25
West
C6 26.60
South
A8 22.00
Alloy, Cold Drawn, East
L2 35.20
R3, N1 37.90
R4 37.10
J3, W10, L2 34.85
T11, S8 34.85
C10 34.85
Midwest
R3 37.35
J3, W10, C10 34.85
B1 37.30
N9 34.85
L2 34.85
B5, M9 38.60
West
R3 40.75
South
J3 35.85
C16 28.00

Plates

Carbon Steel, East
B3 23.25
I4, U1 25.75
P2 23.25
J3 26.75
Midwest
B3 23.25
I3 25.75
J3, A7 22.80
U1, I4, S1 25.75
R3 26.75
West
U1 25.75
O2 23.00
South
R3 25.75
U1 25.75
Alloy East
B3 31.05
U1, I4 33.55
P2 33.55
J3 34.55
Midwest
R3 31.05
I4, U1 33.55
West
O2 31.00
South
U1 33.55

Wire

Carbon Steel Wire, East
B3 27.10
A11 22.15
Midwest
R3 24.60
N4, W7 27.40
K2 24.20
South
A8 22.85
West
C6 24.95